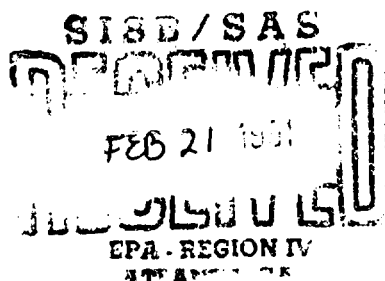


**POOR LEGIBILITY**

**PORTIONS OF THIS DOCUMENT  
MAY BE UNREADABLE, DUE TO  
THE QUALITY OF THE  
ORIGINAL**



1927 LAKESIDE PARKWAY  
SUITE 614  
TUCKER, GEORGIA 30084  
404-938-7710



C-586-2-1-90

February 19, 1991

Mr. A.R. Hanke  
Waste Programs Branch  
Waste Management Division  
Environmental Protection Agency  
345 Courtland Street, N. E.  
Atlanta, Georgia 30365

Date: 3-13-91  
Site Disposition: NFRAP  
EPA Project Manager: BENEDIKT CB

Subject: Screening Site Inspection, Phase I  
Kentucky Petroleum Products  
Louisville, Jefferson County, Kentucky  
EPA ID No. KYD061564001  
TDD No. F4-9001-115  
Revision 0

Dear Mr. Hanke:

FIT 4 conducted a Screening Site Inspection, Phase I at Kentucky Petroleum Products in Louisville, Jefferson County, Kentucky. This assessment included a review of EPA and state file material, completion of a target survey and an offsite reconnaissance of the facility and surrounding area.

Kentucky Petroleum Products is located at 6911 Grade Lane at the intersection of Knopp Avenue in the city of Louisville, Jefferson County, Kentucky (Refs. 1, 2). The fenced facility occupies a 1 acre tract and is owned by Leo J. Shircliff (Refs. 2, 3). The facility is now known as Kentucky Petroleum Waste, Inc. (Ref. 2).

Kentucky Petroleum Products is a waste oil recycler that operates several tank trucks which collect waste oil and deliver it to a small storage facility (Ref. 1). The facility has been involved in petroleum products reclamation since 1962 and is currently active (Ref. 4). The storage facility consists of approximately 15 aboveground storage tanks. The waste oil is stored and later sold to various companies that either refine it into petroleum products, place it in a waste oil fuel program, or burn it as a waste oil fuel (Ref. 1).

Kentucky Petroleum Products did not file a RCRA Part A application for a hazardous waste permit in 1980 (Ref. 5). Kentucky Petroleum Products filed applications for transporting and handling of hazardous waste on June 22, 1977 and November 21, 1977 (Refs. 6, 7). On January 29, 1986, the facility filed a Notification of Hazardous Waste Activity stating that they were a Transporter and Treatment, Storage and/or Disposal facility; however, inspections conducted by the state have determined that the facility was not a hazardous waste TSD facility (Ref. 8). They were issued a Certificate of Registration as a Hazardous Waste Fuel Marketer and Off-specification Used Oil Marketer on May 9, 1986 (Ref. 9). The facility is currently registered as an off-specification used oil fuel marketer, off-specification used oil fuel burner, and specification used-oil fuel marketer (Refs. 10, 11).



Mr. A.R. Hanke  
Environmental Protection Agency  
TDD No. F4-9001-115  
February 19, 1991 - page 2

In March 1978, Kentucky Petroleum Products deposited approximately 1,000 gallons of waste oil from a tank truck onto the working face of Mobile Waste landfill (Ref. 12). In February 1984, the state of Kentucky, Division of Waste Management collected samples from 13 onsite storage tanks. Analytical results identified solvents in all samples. The solvents identified were 1,1,1-trichloroethane with a concentration of 15 to 640 mg/kg, trichloroethene with a concentration of 1.1 to 1,600 mg/kg, and tetrachloroethene with a concentration of 16 to 4,700 mg/kg (Ref. 13). In October of 1988, the Kentucky Natural Resources and Environmental Protection Cabinet filed an Agreed Order with the Division of Hearings stating that the facility was in violation of several standards applicable to used oil fuel marketers and burners (Ref. 14).

Jefferson County lies within the Ohio River Valley and the Bluegrass regions of north-central Kentucky (Ref. 15). This area is located on the western flank of the Cincinnati Arch, within the Interior Low Plateaus Physiographic Province and the nonglaciated central region hydrogeologic setting (Refs. 15, 16, p. 228). The net annual rainfall for the area is 9 inches and the 1-year, 24-hour rainfall is 2.8 inches (Refs. 17, pp. 43, 63; 18, p. 93).

The majority of the county is drained by small tributaries of the Ohio River (Ref. 19, p. C5). The present valley of the Ohio River was cut into the shale and limestone bedrock during glacial times. The rock valley was filled with Quaternary alluvium which underlies the Ohio River flood plain to a maximum depth of 130 feet (Ref. 19, pp. C5, C7).

The alluvium in the Ohio River flood plain is the principal aquifer and second most important source of water in the area. The aquifer is made up of outwash sand and gravel of Pleistocene age ranging from 0 to 130 feet in thickness, depending on the altitude of the erosional surface of the underlying bedrock formations (Ref. 19, p. C7). The upper portion of the unconsolidated deposits consist of 5 to 40 feet of relatively impermeable clay, silt, and fine sand (Ref. 20, p. 49). Laboratory analysis of sediments similar to these have been shown to have hydraulic conductivities ranging between  $1.0 \times 10^{-5}$  cm/s and  $1.0 \times 10^{-7}$  cm/s (Ref. 21, p. 29). Beneath this layer are thick deposits of permeable sand and gravel (Ref. 20, p. 49).

The alluvial aquifer is hydraulically connected with the Ohio River in this area. Infiltration from the Ohio River and flow through the limestone valley wall are major contributors of recharge to the aquifer. Groundwater flow is generally toward the Ohio River (Refs. 20, 21). The depth of groundwater at the facility ranges between 5 and 10 feet below land surface (bls). The depth to groundwater is variable and is very dependent upon topographic elevation and position as well as the seasonal availability of water (Ref. 20).

The Louisville Limestone of Silurian age and the Jefferson and Sellersburg limestones of Devonian age underlie the alluvium. These bedrocks are considered to be a single aquifer. Water in this aquifer is contained in and moves along interconnected cracks and solution channels (Ref. 19, p. C18). The limestone beneath the flood plain is hydraulically connected with the alluvial deposits of sand and gravel, from which a continuing source of recharge is available. In the Bluegrass region, the limestone supplies small quantities of water to domestic wells, but beneath the Ohio River alluvium it is capable of yielding large quantities of water, mostly for industrial use (Ref. 15).

The Louisville Water Company (LWC) serves the city of Louisville, Kentucky. The LWC obtains potable water from two surface water intakes on the Ohio River. One intake is located at river mile 600.6 (Zorn Avenue). A second surface water intake is located above Herrods Creek at Mayfair Avenue and

Mr. A.R. Hanke  
Environmental Protection Agency  
TDD No. F4-9001-115  
February 19, 1991 - page 3

Jacobs School Road. Both surface water intakes are located upstream from the facility (Refs. 22, 24). The LWC serves 208,500 residential, industrial, and commercial customers. The LWC also wholesales water to other systems, including Jeffersontown and the Indiana Water and Sewer Commission. These systems serve an additional 40,000 persons (Ref. 24).

There are private wells located within the LWC service area. These wells obtain water from the flood plain alluvium at depths ranging from 60-90 feet bls (Ref. 24). No private wells were located within 4 miles of the Kentucky Petroleum Waste, Inc. facility (Ref. 25). There are 3,758 residences within Jefferson County that are not connected to the municipal water system, 485 of which have access but have not obtained water connections (Ref. 26). The residents within 4 miles of Kentucky Petroleum Waste, Inc. obtain drinking water from the Louisville Water Company (Ref. 25).

Surface water drains from the northwestern corner of the Kentucky Petroleum Waste, Inc. facility and flows approximately 1500 feet in a northeastward direction in a roadside drainage ditch and enters Northern ditch. Water flows approximately 2.6 miles southwest along Northern ditch and enters Southern ditch. Water then flows approximately 1.9 miles along Southern ditch and enters Pond Creek. Water then flows another 10.2 miles southwest along Pond Creek. Northern ditch and Southern ditch are man-made drainage ditches for the area surrounding the Kentucky Petroleum Waste, Inc. facility (Ref. 21).

The ranges of several endangered species include Jefferson County. The endangered species are the gray bat (Myotis grisescens), Indiana bat (Myotis sodalis), eastern cougar (Felis concolor cougar), bald eagle (Haliaeetus leucocephalus), least tern (Sterna antillarum), Bachman's warbler (Vermivora bachmanni), ivory-billed woodpecker (Campephilus principalis). The area is also a critical habitat for the Indiana bat (Myotis sodalis) (Ref. 27).

The Kentucky Petroleum Waste, Inc. facility is located in a commercial/industrial area of Louisville, Kentucky. During an offsite reconnaissance on April 19, 1990, the facility was active. The facility is completely fenced and access is controlled by locked gates on the south and west sides of the facility (Ref. 3). The nearest residence is approximately 1,300 feet east of the facility. There are no schools or day-care centers within 1 mile of the facility (Ref. 21). A house count, using a topographic map of the facility area, provided an estimate of population in the 0- to 1-mile radius. The population within 1 mile of the facility is 467 (123 houses X 3.8) (Refs. 21, 28). The population within 3 miles of the facility is 63,410 and the population within 4 miles of the facility is 122,977 (Ref. 29).

Based on the above results of this evaluation and the attached reference material, FIT 4 recommends no further remedial action be planned for the Kentucky Petroleum Waste, Inc. facility. If you have any comments or questions about this assessment, please contact me at NUS Corporation.

Very truly yours,

Approved:



Wendell C. McLendon  
Project Manager



WCM/jec

cc: Craig Benedikt



## REFERENCES

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2. NUS Corporation Field Logbook No. F4-2169 for Kentucky Petroleum Products, TDD No. F4-9001-115. Documentation of facility reconnaissance, April 19, 1990.
3. Wendell C. McLendon, NUS Corporation, memo to file for Kentucky Petroleum Products, November 1, 1990. Subject: Property ownership of facility and surrounding property.
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8. Notification of Hazardous Waste Activity (EPA Form 8700-12) for Kentucky Petroleum Waste, Inc., filed by James L. Shircliff, owner, January 29, 1986.
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13. William E. Davis, Director, Environmental Services, memorandum to Carl Horneman, Division of Waste Management, Frankfort, Kentucky, March 13, 1984. Subject: Report of analysis for samples from storage tanks at Kentucky Petroleum Waste, Inc., Louisville, Kentucky.

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19. E.A. Bell, Summary of Hydrologic Conditions of the Louisville Area, Kentucky, U.S. Geological Survey Water Supply Paper 1819-C (Washington, D.C.: GPO 1966), pp.C4 - C18.
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25. Louisville Water Company, Distribution System Map; obtained from Jerry R. Ford, Louisville Water Company, July 26, 1990.
26. Charles Schott, Louisville Water Company, telephone conversation with Wendell C. McLendon, NUS Corporation, April 26, 1990. Subject: information on the number of customers served by the Louisville Water Company.
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# Site Inspection Report



POTENTIAL HAZARDOUS WASTE SITE  
SITE INSPECTION REPORT  
PART 1 - SITE LOCATION AND INSPECTION INFORMATION

I. IDENTIFICATION

01 STATE KY 02 SITE NUMBER D061564001

II. SITE NAME AND LOCATION

01 SITE NAME (Legal, common, or descriptive name of site) KENTUCKY PETROLEUM WASTE, INC. 02 STREET, ROUTE NO., OR SPECIFIC LOCATION IDENTIFIER 6911 GRADE LANE  
03 CITY \_\_\_\_\_ 04 STATE \_\_\_\_\_ 05 ZIP CODE \_\_\_\_\_ 06 COUNTY JEFFERSON 07 COUNTY CODE \_\_\_\_\_ 08 CONG DIST \_\_\_\_\_  
09 COORDINATES LATITUDE 38 08 22.0 LONGITUDE 085 44 08.0 10 TYPE OF OWNERSHIP (Check one)  
☒ A. PRIVATE ☐ B. FEDERAL ☐ C. STATE ☐ D. COUNTY ☐ E. MUNICIPAL  
☐ F. OTHER \_\_\_\_\_ ☐ G. UNKNOWN

III. INSPECTION INFORMATION

01 DATE OF INSPECTION 04 18 90 02 SITE STATUS ☒ ACTIVE ☐ INACTIVE 03 YEARS OF OPERATION 1962 1 PRESENT \_\_\_\_\_ UNKNOWN  
MONTH DAY YEAR BEGINNING YEAR ENDING YEAR  
04 AGENCY PERFORMING INSPECTION (Check all that apply)  
☐ A. EPA ☒ B. EPA CONTRACTOR NUS CORPORATION ☐ C. MUNICIPAL ☐ D. MUNICIPAL CONTRACTOR \_\_\_\_\_  
Name of firm Name of firm  
☐ E. STATE ☐ F. STATE CONTRACTOR \_\_\_\_\_ ☐ G. OTHER \_\_\_\_\_  
Name of firm Specify

05 CHIEF INSPECTOR WENDELL C. M'KENNON 06 TITLE FIELD TECHNICIAN 07 ORGANIZATION NUS CORP 08 TELEPHONE NO (404) 938-7710

09 OTHER INSPECTORS STEPHAN Y FINE 10 TITLE GEOLOGIST 11 ORGANIZATION NUS CORP 12 TELEPHONE NO (404) 938-7710

			( )
			( )
			( )
			( )

13 SITE REPRESENTATIVES INTERVIEWED 14 TITLE 15 ADDRESS 16 TELEPHONE NO  
( )

			( )
			( )
			( )
			( )
			( )
			( )

17 ACCESS GAINED BY (Check one) ☐ PERMISSION ☐ WARRANT 18 TIME OF INSPECTION 1010 19 WEATHER CONDITIONS CLEAR AND COOL

IV. INFORMATION AVAILABLE FROM

01 CONTACT CRANE BENEDICT 02 OF (Agency, Organization) EPA - REGION IV 03 TELEPHONE NO (404) 347-5065  
04 PERSON RESPONSIBLE FOR SITE INSPECTION FORM WENDELL C. M'KENNON 05 AGENCY \_\_\_\_\_ 06 ORGANIZATION NUS CORPORATION 07 TELEPHONE NO (404) 938-7710 08 DATE 02/19/90  
MONTH DAY YEAR





POTENTIAL HAZARDOUS WASTE SITE  
SITE INSPECTION REPORT  
PART 3 - DESCRIPTION OF HAZARDOUS CONDITIONS AND INCIDENTS

I. IDENTIFICATION

01 STATE 02 SITE NUMBER  
KY 0061564001

II. HAZARDOUS CONDITIONS AND INCIDENTS

01 ☒ A GROUNDWATER CONTAMINATION 02 ☐ OBSERVED (DATE: \_\_\_\_\_) ☒ POTENTIAL ☐ ALLEGED  
03 POPULATION POTENTIALLY AFFECTED: \_\_\_\_\_ 04 NARRATIVE DESCRIPTION

SPILLS OF WASTE OILS COULD CONTAMINATE GROUNDWATER.

01 ☒ B SURFACE WATER CONTAMINATION 02 ☐ OBSERVED (DATE: \_\_\_\_\_) ☒ POTENTIAL ☐ ALLEGED  
03 POPULATION POTENTIALLY AFFECTED: \_\_\_\_\_ 04 NARRATIVE DESCRIPTION

SPILLS OF WASTE OILS AND FUELS COULD POSSIBLY CONTAMINATE SURFACE WATER  
DRAINAGE DITCHES.

01 ☒ C CONTAMINATION OF AIR 02 ☐ OBSERVED (DATE: \_\_\_\_\_) ☐ POTENTIAL ☐ ALLEGED  
03 POPULATION POTENTIALLY AFFECTED: \_\_\_\_\_ 04 NARRATIVE DESCRIPTION

REMOTE POTENTIAL

01 ☒ D FIRE/EXPLOSIVE CONDITIONS 02 ☐ OBSERVED (DATE: \_\_\_\_\_) ☒ POTENTIAL ☐ ALLEGED  
03 POPULATION POTENTIALLY AFFECTED: \_\_\_\_\_ 04 NARRATIVE DESCRIPTION

WASTE OILS AND FUELS ARE FLAMMABLE.

01 ☒ E DIRECT CONTACT 02 ☐ OBSERVED (DATE: \_\_\_\_\_) ☒ POTENTIAL ☐ ALLEGED  
03 POPULATION POTENTIALLY AFFECTED: \_\_\_\_\_ 04 NARRATIVE DESCRIPTION

SPILLS OF WASTE OILS AND FUELS COULD COME IN DIRECT CONTACT WITH EMPLOYEES.

01 ☒ F CONTAMINATION OF SOIL 02 ☐ OBSERVED (DATE: \_\_\_\_\_) ☒ POTENTIAL ☐ ALLEGED  
03 AREA POTENTIALLY AFFECTED: ≈ 1 (Acres) 04 NARRATIVE DESCRIPTION

SPILLS OF WASTE OILS AND FUELS COULD CONTAMINATE SOILS

01 ☒ G DRINKING WATER CONTAMINATION 02 ☐ OBSERVED (DATE: \_\_\_\_\_) ☐ POTENTIAL ☐ ALLEGED  
03 POPULATION POTENTIALLY AFFECTED: \_\_\_\_\_ 04 NARRATIVE DESCRIPTION

THERE ARE NO SURFACE WATER INTAKES ALONG DRAINAGE PATHWAY.

01 ☒ H WORKER EXPOSURE/INJURY 02 ☐ OBSERVED (DATE: \_\_\_\_\_) ☒ POTENTIAL ☐ ALLEGED  
03 WORKERS POTENTIALLY AFFECTED: \_\_\_\_\_ 04 NARRATIVE DESCRIPTION

SPILLS COULD CAUSE EMPLOYEES TO COME IN DIRECT CONTACT WITH WASTE OIL AND  
FUEL.

01 ☐ I POPULATION EXPOSURE/INJURY 02 ☐ OBSERVED (DATE: \_\_\_\_\_) ☐ POTENTIAL ☐ ALLEGED  
03 POPULATION POTENTIALLY AFFECTED: \_\_\_\_\_ 04 NARRATIVE DESCRIPTION

REMOTE POTENTIAL. EMPLOYEES COULD COME IN DIRECT CONTACT WITH WASTE  
OILS AND FUELS.



POTENTIAL HAZARDOUS WASTE SITE  
SITE INSPECTION REPORT  
PART 3 - DESCRIPTION OF HAZARDOUS CONDITIONS AND INCIDENTS

I. IDENTIFICATION

01 STATE 02 SITE NUMBER  
Ky 0061564601

II. HAZARDOUS CONDITIONS AND INCIDENTS (Continued)

01 ☐ J. DAMAGE TO FLORA 02 ☐ OBSERVED (DATE: \_\_\_\_\_) ☐ POTENTIAL ☐ ALLEGED  
04 NARRATIVE DESCRIPTION

NONE NOTED

01 ☐ K. DAMAGE TO FAUNA 02 ☐ OBSERVED (DATE: \_\_\_\_\_) ☐ POTENTIAL ☐ ALLEGED  
04 NARRATIVE DESCRIPTION (Include name(s) of species)

NONE REPORTED

01 ☐ L. CONTAMINATION OF FOOD CHAIN 02 ☐ OBSERVED (DATE: \_\_\_\_\_) ☐ POTENTIAL ☐ ALLEGED  
04 NARRATIVE DESCRIPTION

NONE REPORTED

01 ☐ M. UNSTABLE CONTAINMENT OF WASTES  
(Spills, Runoff, Standing liquids, Leaking drums) 02 ☐ OBSERVED (DATE: \_\_\_\_\_) ☐ POTENTIAL ☐ ALLEGED  
03 POPULATION POTENTIALLY AFFECTED: \_\_\_\_\_ 04 NARRATIVE DESCRIPTION

TANKS HAVE CONTAINMENT DIKES.

01 ☐ N. DAMAGE TO OFFSITE PROPERTY 02 ☐ OBSERVED (DATE: \_\_\_\_\_) ☐ POTENTIAL ☐ ALLEGED  
04 NARRATIVE DESCRIPTION

THE SITE IS BORDERED BY STREETS AND VACANT LOTS.

01 ☒ O. CONTAMINATION OF SEWERS, STORM DRAINS, WWTPs 02 ☐ OBSERVED (DATE: \_\_\_\_\_) ☒ POTENTIAL ☐ ALLEGED  
04 NARRATIVE DESCRIPTION

SPILLS OF USED OILS AND FUELS COULD CONTAMINATE DRAINAGE DITCHES.

01 ☒ P. ILLEGAL UNAUTHORIZED DUMPING 02 ☐ OBSERVED (DATE: \_\_\_\_\_) ☐ POTENTIAL ☐ ALLEGED  
04 NARRATIVE DESCRIPTION

NONE REPORTED

05 DESCRIPTION OF ANY OTHER KNOWN, POTENTIAL, OR ALLEGED HAZARDS

NONE REPORTED.

III. TOTAL POPULATION POTENTIALLY AFFECTED: \_\_\_\_\_

IV. COMMENTS

V. SOURCES OF INFORMATION (Cite specific references, e.g. State files, sample analysis, etc.)

STATE AND EPA FILE MATERIAL



POTENTIAL HAZARDOUS WASTE SITE  
SITE INSPECTION  
PART 4 - PERMIT AND DESCRIPTIVE INFORMATION

I. IDENTIFICATION

01 STATE 02 SITE NUMBER  
KY D061564001

II. PERMIT INFORMATION

01 TYPE OF PERMIT ISSUED (Check all that apply)	02 PERMIT NUMBER	03 DATE ISSUED	04 EXPIRATION DATE	05 COMMENTS
<input type="checkbox"/> A NPDES				
<input type="checkbox"/> B UIC				
<input type="checkbox"/> C AIR				
<input type="checkbox"/> D RCRA				
<input type="checkbox"/> E RCRA INTERIM STATUS				
<input type="checkbox"/> F SPCC PLAN				
<input type="checkbox"/> G STATE (Specify)				
<input type="checkbox"/> H LOCAL (Specify)				
<input type="checkbox"/> I OTHER (Specify)				
<input type="checkbox"/> J NONE				

III. SITE DESCRIPTION

01 STORAGE/ DISPOSAL (Check all that apply)	02 AMOUNT	03 UNIT OF MEASURE	04 TREATMENT (Check all that apply)	05 OTHER
<input type="checkbox"/> A. SURFACE IMPOUNDMENT			<input type="checkbox"/> A. INCENERATION	<input checked="" type="checkbox"/> A. BUILDINGS ON SITE
<input type="checkbox"/> B. PILES			<input type="checkbox"/> B. UNDERGROUND INJECTION	
<input type="checkbox"/> C. DRUMS, ABOVE GROUND			<input type="checkbox"/> C. CHEMICAL/PHYSICAL	
<input checked="" type="checkbox"/> D. TANK, ABOVE GROUND	197,500	GALLONS	<input type="checkbox"/> D. BIOLOGICAL	
<input type="checkbox"/> E. TANK, BELOW GROUND			<input type="checkbox"/> E. WASTE OIL PROCESSING	
<input type="checkbox"/> F. LANDFILL			<input type="checkbox"/> F. SOLVENT RECOVERY	
<input type="checkbox"/> G. LANDFARM			<input type="checkbox"/> G. OTHER RECYCLING/RECOVERY	
<input type="checkbox"/> H. OPEN DUMP			<input type="checkbox"/> H. OTHER (Specify)	
<input type="checkbox"/> I. OTHER (Specify)				06 AREA OF SITE ≈ 1 ACRES

07 COMMENTS

IV. CONTAINMENT

01 CONTAINMENT OF WASTES (Check one)

☒ A. ADEQUATE, SECURE    ☐ B. MODERATE    ☐ C. INADEQUATE, POOR    ☐ D. INSECURE, UNSOUND, DANGEROUS

02 DESCRIPTION OF DRUMS, DIKING, LINERS, BARRIERS, ETC.

TANKS HAVE CONTAINMENT DIKES.

V. ACCESSIBILITY

01 WASTE EASILY ACCESSIBLE ☐ YES ☒ NO

02 COMMENTS

FACILITY IS FENCED.

VI. SOURCES OF INFORMATION (Cite specific references, e.g. state files, sample analysis reports.)

STATE, EPA FILE MATERIAL





POTENTIAL HAZARDOUS WASTE SITE  
SITE INSPECTION REPORT  
PART 5 - WATER, DEMOGRAPHIC, AND ENVIRONMENTAL DATA

I. IDENTIFICATION

01 STATE 02 SITE NUMBER

KY 0061564001

II. DRINKING WATER SUPPLY

01 TYPE OF DRINKING SUPPLY  
(Check as applicable)

SURFACE

WELL

COMMUNITY

A ☒

B ☐

NON-COMMUNITY

C ☒

D ☐

02 STATUS

ENDANGERED

AFFECTED

MONITORED

A ☐

B ☐

C ☐

D ☐

E ☐

F ☐

03 DISTANCE TO SITE

A. UPPER ROCKY (mi)

B. UPPER ROCKY (mi)

III. GROUNDWATER

01 GROUNDWATER USE IN VICINITY (Check one)

☐ A. ONLY SOURCE FOR DRINKING

☐ B. DRINKING

(Other sources available)

☐ C. COMMERCIAL, INDUSTRIAL, IRRIGATION

(Limited other sources available)

☒ D. NOT USED, UNUSEABLE

COMMERCIAL, INDUSTRIAL, IRRIGATION  
(No other water sources available)

02 POPULATION SERVED BY GROUND WATER NONE

03 DISTANCE TO NEAREST DRINKING WATER WELL \_\_\_\_\_ (mi)

04 DEPTH TO GROUNDWATER

5-10 (ft)

05 DIRECTION OF GROUNDWATER FLOW

SW

06 DEPTH TO AQUIFER  
OF CONCERN

X (ft)

07 POTENTIAL YIELD  
OF AQUIFER

\_\_\_\_\_ (gpd)

08 SOLE SOURCE AQUIFER

☐ YES ☒ NO

09 DESCRIPTION OF WELLS (including usage, depth, and location relative to population and buildings)

THERE ARE NO WELLS WITHIN 4 MILES OF THE FACILITY.

10 RECHARGE AREA

☐ YES

COMMENTS

☐ NO

11 DISCHARGE AREA

☐ YES

COMMENTS

☐ NO

IV. SURFACE WATER

01 SURFACE WATER USE (Check one)

☐ A. RESERVOIR, RECREATION  
DRINKING WATER SOURCE

☐ B. IRRIGATION, ECONOMICALLY  
IMPORTANT RESOURCES

☐ C. COMMERCIAL, INDUSTRIAL

☒ D. NOT CURRENTLY USED

02 AFFECTED/POTENTIALLY AFFECTED BODIES OF WATER

NAME:

Rock Creek

AFFECTED

DISTANCE TO SITE

☐

47 (mi)

☐

\_\_\_\_\_ (mi)

☐

\_\_\_\_\_ (mi)

V. DEMOGRAPHIC AND PROPERTY INFORMATION

01 TOTAL POPULATION WITHIN

ONE (1) MILE OF SITE

A. 467  
NO. OF PERSONS

TWO (2) MILES OF SITE

B. 20,326  
NO. OF PERSONS

THREE (3) MILES OF SITE

C. 63,410  
NO. OF PERSONS

02 DISTANCE TO NEAREST POPULATION

0.2 (mi)

03 NUMBER OF BUILDINGS WITHIN TWO (2) MILES OF SITE

04 DISTANCE TO NEAREST OFF-SITE BUILDING

0.1 (mi)

05 POPULATION WITHIN VICINITY OF SITE (Provide narrative description of nature of population within vicinity of site, e.g., rural, village, densely populated urban area)

THE FACILITY IS IN A COMMERCIAL/INDUSTRIAL AREA IN LOUISVILLE, KY. POPULATION INCREASES RAPIDLY BETWEEN 1+2 MILES AND BETWEEN 2+3 MILES OF THE FACILITY



POTENTIAL HAZARDOUS WASTE SITE  
SITE INSPECTION REPORT  
PART 5 - WATER, DEMOGRAPHIC, AND ENVIRONMENTAL DATA

I. IDENTIFICATION

01 STATE 02 SITE NUMBER  
KY 0061564001

VI. ENVIRONMENTAL INFORMATION

01 PERMEABILITY OF UNSATURATED ZONE (check one)

☒ A.  $10^{-9} - 10^{-8}$  cm/sec ☐ B.  $10^{-8} - 10^{-7}$  cm/sec ☐ C.  $10^{-7} - 10^{-6}$  cm/sec ☐ D. GREATER THAN  $10^{-6}$  cm/sec

02 PERMEABILITY OF BEDROCK (check one)

☐ A. IMPERMEABLE (Less than  $10^{-9}$  cm/sec) ☒ B. RELATIVELY IMPERMEABLE ( $10^{-9} - 10^{-8}$  cm/sec) ☐ C. RELATIVELY PERMEABLE ( $10^{-8} - 10^{-7}$  cm/sec) ☐ D. VERY PERMEABLE (Greater than  $10^{-7}$  cm/sec)

03 DEPTH TO BEDROCK

up to 130 (ft)

04 DEPTH OF CONTAMINATED SOIL ZONE

6? (ft)

05 SOIL pH

06 NET PRECIPITATION

9 (in)

07 ONE YEAR 24 HOUR RAINFALL

2.8 (in)

08 SLOPE

SITE SLOPE

1%

DIRECTION OF SITE SLOPE

NW

TERRAIN AVERAGE SLOPE

1%

09 FLOOD POTENTIAL

SITE IS IN \_\_\_\_\_ YEAR FLOODPLAIN

10

☐ SITE IS ON BARRIER ISLAND, COASTAL HIGH HAZARD AREA, RIVERINE FLOODWAY

11 DISTANCE TO WETLANDS (5 acre minimum)

ESTUARINE

A. ☒ (mi)

OTHER

B. ☒ (mi)

12 DISTANCE TO CRITICAL HABITAT (of endangered species)

\_\_\_\_\_ (mi)

ENDANGERED SPECIES: \_\_\_\_\_

13 LAND USE IN VICINITY

DISTANCE TO:

COMMERCIAL/INDUSTRIAL

RESIDENTIAL AREAS, NATIONAL/STATE PARKS,  
FORESTS, OR WILDLIFE RESERVES

AGRICULTURAL LANDS  
PRIME AG LAND AG LAND

A. ☒ (mi)

B. ☒ (mi)

C. \_\_\_\_\_ (mi) D. \_\_\_\_\_ (mi)

14 DESCRIPTION OF SITE IN RELATION TO SURROUNDING TOPOGRAPHY

THE FACILITY IS IN A COMMERCIAL/INDUSTRIAL AREA OF LOUISVILLE, KY.

VII. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis reports)

STATE, EPA, MMS FILES



POTENTIAL HAZARDOUS WASTE SITE  
SITE INSPECTION REPORT  
PART 8 - SAMPLE AND FIELD INFORMATION

I. IDENTIFICATION

01 STATE 02 SITE NUMBER  
KY D061564001

II. SAMPLES TAKEN

SAMPLE TYPE	01 NUMBER OF SAMPLES TAKEN	02 SAMPLES SENT TO	03 ESTIMATED DATE RESULTS AVAILABLE
GROUNDWATER			
SURFACE WATER			
WASTE OIL	13	ENVIRONMENTAL SERVICES, FRANKFORT, KY	3/13/84
AIR			
RUNOFF			
SPILL			
SOIL			
VEGETATION			
OTHER			

III. FIELD MEASUREMENTS TAKEN

01 TYPE	02 COMMENTS
NOT DOCUMENTED	

IV. PHOTOGRAPHS AND MAPS

01 TYPE <input checked="" type="checkbox"/> GROUND <input type="checkbox"/> AERIAL	02 IN CUSTODY OF <u>MUS CORPORATION FILES</u> <small>(Name of organization or individual)</small>
03 MAPS <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	04 LOCATION OF MAPS <u>MUS CORPORATION FILES.</u>

V. OTHER FIELD DATA COLLECTED (Provide narrative description)

VI. SOURCES OF INFORMATION (Cite specific references, e.g. state files, sample analysis, etc.)

EPA AND STATE FILE MATERIAL



POTENTIAL HAZARDOUS WASTE SITE  
SITE INSPECTION REPORT  
PART 7 - OWNER INFORMATION

I. IDENTIFICATION

01 STATE 02 SITE NUMBER  
KY 0061564001

II. CURRENT OWNER(S)				PARENT COMPANY (If 200HC 200H)			
01 NAME LEO J. SKIRCLIFF	02 D+B NUMBER		08 NAME N/A		09 D+B NUMBER		
03 STREET ADDRESS (P.O. Box, RFD #, etc.) 4019 BLANTON LANE (?)		04 SIC CODE		10 STREET ADDRESS (P.O. Box, RFD #, etc.)		11 SIC CODE	
05 CITY LOUISVILLE	06 STATE KY	07 ZIP CODE		12 CITY	13 STATE	14 ZIP CODE	
01 NAME	02 D+B NUMBER		08 NAME		09 D+B NUMBER		
03 STREET ADDRESS (P.O. Box, RFD #, etc.)		04 SIC CODE		10 STREET ADDRESS (P.O. Box, RFD #, etc.)		11 SIC CODE	
05 CITY	06 STATE	07 ZIP CODE		12 CITY	13 STATE	14 ZIP CODE	
01 NAME	02 D+B NUMBER		08 NAME		09 D+B NUMBER		
03 STREET ADDRESS (P.O. Box, RFD #, etc.)		04 SIC CODE		10 STREET ADDRESS (P.O. Box, RFD #, etc.)		11 SIC CODE	
05 CITY	06 STATE	07 ZIP CODE		12 CITY	13 STATE	14 ZIP CODE	
01 NAME	02 D+B NUMBER		08 NAME		09 D+B NUMBER		
03 STREET ADDRESS (P.O. Box, RFD #, etc.)		04 SIC CODE		10 STREET ADDRESS (P.O. Box, RFD #, etc.)		11 SIC CODE	
05 CITY	06 STATE	07 ZIP CODE		12 CITY	13 STATE	14 ZIP CODE	
III. PREVIOUS OWNER(S) (List most recent first)							
01 NAME N/A	02 D+B NUMBER		IV. REALTY OWNER(S) (If applicable, list most recent first)				
03 STREET ADDRESS (P.O. Box, RFD #, etc.)		04 SIC CODE		01 NAME N/A		02 D+B NUMBER	
05 CITY		06 STATE	07 ZIP CODE	03 STREET ADDRESS (P.O. Box, RFD #, etc.)		04 SIC CODE	
05 CITY		06 STATE	07 ZIP CODE	05 CITY		06 STATE	07 ZIP CODE
01 NAME	02 D+B NUMBER		01 NAME		02 D+B NUMBER		
03 STREET ADDRESS (P.O. Box, RFD #, etc.)		04 SIC CODE		03 STREET ADDRESS (P.O. Box, RFD #, etc.)		04 SIC CODE	
05 CITY	06 STATE	07 ZIP CODE		05 CITY	06 STATE	07 ZIP CODE	
01 NAME	02 D+B NUMBER		01 NAME		02 D+B NUMBER		
03 STREET ADDRESS (P.O. Box, RFD #, etc.)		04 SIC CODE		03 STREET ADDRESS (P.O. Box, RFD #, etc.)		04 SIC CODE	
05 CITY	06 STATE	07 ZIP CODE		05 CITY	06 STATE	07 ZIP CODE	
V. SOURCES OF INFORMATION (Cite specific references, e.g. state files, sample analysis reports)							
STATE & EPA FILES MATERIAL							



POTENTIAL HAZARDOUS WASTE SITE  
SITE INSPECTION REPORT  
PART 8 - OPERATOR INFORMATION

I. IDENTIFICATION

01 STATE 02 SITE NUMBER  
KY 0061564001

II. CURRENT OPERATOR Provide if different from owner

OPERATOR'S PARENT COMPANY (if applicable)

01 NAME LEO J. SHIRCLIFF		02 D+B NUMBER		10 NAME N/A		11 D+B NUMBER	
03 STREET ADDRESS (P.O. Box, RFD #, etc.)		04 SIC CODE		12 STREET ADDRESS (P.O. Box, RFD #, etc.)		13 SIC CODE	
05 CITY LOUISVILLE		06 STATE KY	07 ZIP CODE 40216	14 CITY		15 STATE	16 ZIP CODE
08 YEARS OF OPERATION		09 NAME OF OWNER					

III. PREVIOUS OPERATOR(S) (List most recent first; provide only if different from owner)

PREVIOUS OPERATORS' PARENT COMPANIES (if applicable)

01 NAME N/A		02 D+B NUMBER		10 NAME N/A		11 D+B NUMBER	
03 STREET ADDRESS (P.O. Box, RFD #, etc.)		04 SIC CODE		12 STREET ADDRESS (P.O. Box, RFD #, etc.)		13 SIC CODE	
05 CITY		06 STATE	07 ZIP CODE	14 CITY		15 STATE	16 ZIP CODE
08 YEARS OF OPERATION		09 NAME OF OWNER DURING THIS PERIOD					

01 NAME		02 D+B NUMBER		10 NAME		11 D+B NUMBER	
03 STREET ADDRESS (P.O. Box, RFD #, etc.)		04 SIC CODE		12 STREET ADDRESS (P.O. Box, RFD #, etc.)		13 SIC CODE	
05 CITY		06 STATE	07 ZIP CODE	14 CITY		15 STATE	16 ZIP CODE
08 YEARS OF OPERATION		09 NAME OF OWNER DURING THIS PERIOD					

01 NAME		02 D+B NUMBER		10 NAME		11 D+B NUMBER	
03 STREET ADDRESS (P.O. Box, RFD #, etc.)		04 SIC CODE		12 STREET ADDRESS (P.O. Box, RFD #, etc.)		13 SIC CODE	
05 CITY		06 STATE	07 ZIP CODE	14 CITY		15 STATE	16 ZIP CODE
08 YEARS OF OPERATION		09 NAME OF OWNER DURING THIS PERIOD					

IV. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

STATE & EPA FILE MATERIAL



POTENTIAL HAZARDOUS WASTE SITE  
SITE INSPECTION REPORT  
PART 9 - GENERATOR/TRANSPORTER INFORMATION

I. IDENTIFICATION

01 STATE 02 SITE NUMBER

KY 0061564001

II. ON-SITE GENERATOR

01 NAME ~ / A	02 D+B NUMBER	
03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	
05 CITY	06 STATE 07 ZIP CODE	

III. OFF-SITE GENERATOR(S)

01 NAME ~ / A	02 D+B NUMBER	01 NAME	02 D+B NUMBER
03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE
05 CITY	06 STATE 07 ZIP CODE	05 CITY	06 STATE 07 ZIP CODE
01 NAME	02 D+B NUMBER	01 NAME	02 D+B NUMBER
03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE
05 CITY	06 STATE 07 ZIP CODE	05 CITY	06 STATE 07 ZIP CODE

IV. TRANSPORTER(S)

01 NAME ~ / A	02 D+B NUMBER	01 NAME	02 D+B NUMBER
03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE
05 CITY	06 STATE 07 ZIP CODE	05 CITY	06 STATE 07 ZIP CODE
01 NAME	02 D+B NUMBER	01 NAME	02 D+B NUMBER
03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE
05 CITY	06 STATE 07 ZIP CODE	05 CITY	06 STATE 07 ZIP CODE

V. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis reports)



POTENTIAL HAZARDOUS WASTE SITE  
SITE INSPECTION REPORT  
PART 10 - PAST RESPONSE ACTIVITIES

I. IDENTIFICATION

01 STATE 02 SITE NUMBER  
KY D061564001

II. PAST RESPONSE ACTIVITIES

01 <input type="checkbox"/> A. WATER SUPPLY CLOSED 04 DESCRIPTION N/A	02 DATE _____	03 AGENCY _____
01 <input type="checkbox"/> B. TEMPORARY WATER SUPPLY PROVIDED 04 DESCRIPTION N/A	02 DATE _____	03 AGENCY _____
01 <input type="checkbox"/> C. PERMANENT WATER SUPPLY PROVIDED 04 DESCRIPTION N/A	02 DATE _____	03 AGENCY _____
01 <input type="checkbox"/> D. SPILLED MATERIAL REMOVED 04 DESCRIPTION N/A	02 DATE _____	03 AGENCY _____
01 <input type="checkbox"/> E. CONTAMINATED SOIL REMOVED 04 DESCRIPTION N/A	02 DATE _____	03 AGENCY _____
01 <input type="checkbox"/> F. WASTE REPACKAGED 04 DESCRIPTION unknown	02 DATE _____	03 AGENCY _____
01 <input type="checkbox"/> G. WASTE DISPOSED ELSEWHERE 04 DESCRIPTION unknown	02 DATE _____	03 AGENCY _____
01 <input type="checkbox"/> H. ON SITE BURIAL 04 DESCRIPTION N/A	02 DATE _____	03 AGENCY _____
01 <input type="checkbox"/> I. IN SITU CHEMICAL TREATMENT 04 DESCRIPTION N/A	02 DATE _____	03 AGENCY _____
01 <input type="checkbox"/> J. IN SITU BIOLOGICAL TREATMENT 04 DESCRIPTION	02 DATE _____	03 AGENCY _____
01 <input type="checkbox"/> K. IN SITU PHYSICAL TREATMENT 04 DESCRIPTION N/A	02 DATE _____	03 AGENCY _____
01 <input type="checkbox"/> L. ENCAPSULATION 04 DESCRIPTION N/A	02 DATE _____	03 AGENCY _____
01 <input type="checkbox"/> M. EMERGENCY WASTE TREATMENT 04 DESCRIPTION unknown	02 DATE _____	03 AGENCY _____
01 <input type="checkbox"/> N. CUTOFF WALLS 04 DESCRIPTION N/A	02 DATE _____	03 AGENCY _____
01 <input type="checkbox"/> O. EMERGENCY DIKING SURFACE WATER DIVERSION 04 DESCRIPTION N/A	02 DATE _____	03 AGENCY _____
01 <input type="checkbox"/> P. CUTOFF TRENCHES/SUMP 04 DESCRIPTION N/A	02 DATE _____	03 AGENCY _____
01 <input type="checkbox"/> Q. SUBSURFACE CUTOFF WALL 04 DESCRIPTION N/A	02 DATE _____	03 AGENCY _____



POTENTIAL HAZARDOUS WASTE SITE  
SITE INSPECTION REPORT  
PART 10 - PAST RESPONSE ACTIVITIES

I. IDENTIFICATION

01 STATE 02 SITE NUMBER

KY 2061564001

II. PAST RESPONSE ACTIVITIES (Continued)

01 ☐ R. BARRIER WALLS CONSTRUCTED  
04 DESCRIPTION

02 DATE

03 AGENCY

N/A

01 ☐ S. CAPPING/COVERING  
04 DESCRIPTION

02 DATE

03 AGENCY

N/A

01 ☐ T. BULK TANKAGE REPAIRED  
04 DESCRIPTION

02 DATE

03 AGENCY

UNKNOWN

01 ☐ U. GROUT CURTAIN CONSTRUCTED  
04 DESCRIPTION

02 DATE

03 AGENCY

N/A

01 ☐ V. BOTTOM SEALED  
04 DESCRIPTION

02 DATE

03 AGENCY

N/A

01 ☐ W. GAS CONTROL  
04 DESCRIPTION

02 DATE

03 AGENCY

N/A

01 ☐ X. FIRE CONTROL  
04 DESCRIPTION

02 DATE

03 AGENCY

N/A

01 ☐ Y. LEACHATE TREATMENT  
04 DESCRIPTION

02 DATE

03 AGENCY

N/A

01 ☐ Z. AREA EVACUATED  
04 DESCRIPTION

02 DATE

03 AGENCY

UNKNOWN

01 ☐ 1. ACCESS TO SITE RESTRICTED  
04 DESCRIPTION

02 DATE

03 AGENCY

UNKNOWN

01 ☐ 2. POPULATION RELOCATED  
04 DESCRIPTION

02 DATE

03 AGENCY

N/A

01 ☐ 3. OTHER REMEDIAL ACTIVITIES  
04 DESCRIPTION

02 DATE

03 AGENCY

N/A

III. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis reports)

EPA AND STATE FILE MATERIAL





POTENTIAL HAZARDOUS WASTE SITE  
SITE INSPECTION REPORT  
PART 11 - ENFORCEMENT INFORMATION

I. IDENTIFICATION

01 STATE 02 SITE NUMBER  
KY 0061564001

II. ENFORCEMENT INFORMATION

01 PAST REGULATORY ENFORCEMENT ACTION ☒ YES ☐ NO

02 DESCRIPTION OF FEDERAL STATE/LOCAL REGULATORY ENFORCEMENT ACTION

IN MARCH 1978, KENTUCKY PETROLEUM PRODUCTS DEPOSITED APPROXIMATELY 1000 GALLONS OF WASTE OIL AT MOBILE WASTE LANDFILL.

IN OCTOBER 1988, KENTUCKY NATURAL RESOURCES AND ENVIRONMENTAL PROTECTION COMMISSION FILED AN AGREED ORDER STATING THAT KY. PETROLEUM PRODUCTS WAS IN VIOLATION OF SEVERAL STANDARDS APPLICABLE TO USED FUEL OIL MARKETERS AND BURNERS.

III. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis reports)

EPA & STATE FILE MATERIAL

## HAZARD RANKING SYSTEM SCORING SUMMARY

FOR

KENTUCKY PETROLEUM PRODUCTS  
EPA SITE NUMBER KYD061564001  
LOUISVILLE  
JEFFERSON COUNTY, KY  
EPA REGION: 4

SCORE STATUS: IN PREPARATION

SCORED BY W. MCLENDON  
OF NUS CORPORATION  
ON 01/29/91

DATE OF THIS REPORT: 01/29/91  
DATE OF LAST MODIFICATION: 01/29/91

GROUND WATER ROUTE SCORE :	3.39
SURFACE WATER ROUTE SCORE:	6.80
AIR ROUTE SCORE :	0.00
<hr/>	
MIGRATION SCORE :	4.39

## HRS GROUND WATER ROUTE SCORE

CATEGORY/FACTOR	RAW DATA	ASN. VALUE	SCORE
1. OBSERVED RELEASE	NO	0	0
2. ROUTE CHARACTERISTICS			
DEPTH TO WATER TABLE	10 FEET		
DEPTH TO BOTTOM OF WASTE	6 FEET		
DEPTH TO AQUIFER OF CONCERN	4 FEET	3	6
PRECIPITATION	44.0 INCHES		
EVAPORATION	35.0 INCHES		
NET PRECIPITATION	9.0 INCHES	2	2
PERMEABILITY	$1.0 \times 10^{-6}$ CM/SEC	1	1
PHYSICAL STATE		3	3
TOTAL ROUTE CHARACTERISTICS SCORE:			12
3. CONTAINMENT		3	3
4. WASTE CHARACTERISTICS			
TOXICITY/PERSISTENCE: TRICHLOROETHENE			12
WASTE QUANTITY	CUBIC YDS	0	
	DRUMS	0	
	GALLONS	197500	
	TONS	0	
TOTAL	988 CU. YDS	6	6
TOTAL WASTE CHARACTERISTICS SCORE:			18
5. TARGETS			
GROUND WATER USE		1	3
DISTANCE TO NEAREST WELL	> 3 MILES		
AND	MATRIX VALUE	0	0
TOTAL POPULATION SERVED	0 PERSONS		
NUMBER OF HOUSES	0		
NUMBER OF PERSONS	0		
NUMBER OF CONNECTIONS	0		
NUMBER OF IRRIGATED ACRES	0		
TOTAL TARGETS SCORE:			3

GROUND WATER ROUTE SCORE (Sgw) = 3.39

## HRS SURFACE WATER ROUTE SCORE

CATEGORY/FACTOR	RAW DATA	ASN. VALUE	SCORE
1. OBSERVED RELEASE	NO	0	0
2. ROUTE CHARACTERISTICS			
SITE LOCATED IN SURFACE WATER	NO		
SITE WITHIN CLOSED BASIN	NO		
FACILITY SLOPE	1.0 %		
INTERVENING SLOPE	1.0 %	0	0
24-HOUR RAINFALL	2.8 INCHES	2	2
DISTANCE TO DOWN-SLOPE WATER	1500 FEET	2	4
PHYSICAL STATE	3		3
TOTAL ROUTE CHARACTERISTICS SCORE:			9
3. CONTAINMENT	3		3
4. WASTE CHARACTERISTICS			
TOXICITY/PERSISTENCE: TRICHLOROETHENE			12
WASTE QUANTITY CUBIC YDS	0		
DRUMS	0		
GALLONS	197500		
TONS	0		
TOTAL	988 CU. YDS	6	6
TOTAL WASTE CHARACTERISTICS SCORE:			18
5. TARGETS			
SURFACE WATER USE		3	9
DISTANCE TO SENSITIVE ENVIRONMENTS		0	0
COASTAL WETLANDS	NONE		
FRESH-WATER WETLANDS	NONE		
CRITICAL HABITAT	NONE		
DISTANCE TO STATIC WATER	> 3 MILES		
DISTANCE TO WATER SUPPLY INTAKE	> 3 MILES		
AND MATRIX VALUE		0	0
TOTAL POPULATION SERVED	0		
NUMBER OF HOUSES	0		
NUMBER OF PERSONS	0		
NUMBER OF CONNECTIONS	0		
NUMBER OF IRRIGATED ACRES	0		
TOTAL TARGETS SCORE:			9

SURFACE WATER ROUTE SCORE (S<sub>SW</sub>) = 6.80

HRS AIR ROUTE SCORE

<u>CATEGORY/FACTOR</u>	<u>RAW DATA</u>	<u>ASN. VALUE</u>	<u>SCORE</u>
1. OBSERVED RELEASE	NO	0	0
2. WASTE CHARACTERISTICS			

REACTIVITY:

INCOMPATIBILITY

TOXICITY

MATRIX VALUE

WASTE QUANTITY CUBIC YARDS  
DRUMS  
GALLONS  
TONS

TOTAL

TOTAL WASTE CHARACTERISTICS SCORE:

N/A

3. TARGETS

POPULATION WITHIN 4-MILE RADIUS

0 to 0.25 mile  
0 to 0.50 mile  
0 to 1.0 mile  
0 to 4.0 miles

DISTANCE TO SENSITIVE ENVIRONMENTS

COASTAL WETLANDS  
FRESH-WATER WETLANDS  
CRITICAL HABITAT

DISTANCE TO LAND USES

COMMERCIAL/INDUSTRIAL  
PARK/FOREST/RESIDENTIAL  
AGRICULTURAL LAND  
PRIME FARMLAND  
HISTORIC SITE WITHIN VIEW?

TOTAL TARGETS SCORE:

N/A

AIR ROUTE SCORE (Sa) = 0.00

HAZARD RANKING SYSTEM SCORING CALCULATIONS  
FOR  
SITE: KENTUCKY PETROLEUM PRODUCTS  
AS OF 01/29/91

PAGE 5

GROUND WATER ROUTE SCORE

ROUTE CHARACTERISTICS		12
CONTAINMENT	X	3
WASTE CHARACTERISTICS	X	18
TARGETS	X	3

$$= 1944 / 57,330 \times 100 = 3.39 = S_{gw}$$

SURFACE WATER ROUTE SCORE

ROUTE CHARACTERISTICS		9
CONTAINMENT	X	3
WASTE CHARACTERISTICS	X	18
TARGETS	X	9

$$= 4374 / 64,350 \times 100 = 6.80 = S_{sw}$$

AIR ROUTE SCORE

$$\text{OBSERVED RELEASE} \quad 0 / 35,100 \times 100 = 0.00 = S_{air}$$

SUMMARY OF MIGRATION SCORE CALCULATIONS

	<u>S</u>	<u>S<sup>2</sup></u>
GROUND WATER ROUTE SCORE (S <sub>gw</sub> )	3.39	11.49
SURFACE WATER ROUTE SCORE (S <sub>sw</sub> )	6.80	46.24
AIR ROUTE SCORE (S <sub>air</sub> )	0.00	0.00
S <sup>2</sup> <sub>gw</sub> + S <sup>2</sup> <sub>sw</sub> + S <sup>2</sup> <sub>air</sub>		57.73
√ (S <sup>2</sup> <sub>gw</sub> + S <sup>2</sup> <sub>sw</sub> + S <sup>2</sup> <sub>air</sub> )		7.60
S <sub>M</sub> = √ (S <sup>2</sup> <sub>gw</sub> + S <sup>2</sup> <sub>sw</sub> + S <sup>2</sup> <sub>air</sub> ) / 1.73		4.39

# CERCLA ELIGIBILITY QUESTIONNAIRE

Site Name: KENTUCKY PETROLEUM PRODUCTS  
 City: LOUISVILLE State: KY  
 EPA ID Number: KYD061564001

I. CERCLA ELIGIBILITY	<u>Yes</u>	<u>No</u>
Did the facility cease operations prior to November 19, 1980?	___	<u>X</u>

If answer YES, STOP, facility is probably a CERCLA site.

If answer NO, Continue to Part II.

II. RCRA ELIGIBILITY	<u>Yes</u>	<u>No</u>
Did the facility file a RCRA Part A application?	___	<u>X</u>

If YES:

- |   |                   |                |
|---|-------------------|----------------|
| 1. Does the facility currently have interim status?                                   | ___               | ___            |
| 2. Did the facility withdraw its Part A application?                                  | ___               | ___            |
| 3. Is the facility a known or possible protective filer?<br>(facility filed in error) | ___               | ___            |
| 4. Type of facility:  |                   |                |
| Generator _____   | Transporter _____ | Recycler _____ |
| TSD (Treatment/Storage/Disposal) _____  |                   |                |

Does the facility have a RCRA operating or post closure permit?	___	<u>X</u>
---	-----	----------

Is the facility a late (after 11/19/80) or non-filer that has been identified by the EPA or the State? (facility did not know it needed to file under RCRA)	___	<u>X</u>
---	-----	----------

If all answers to questions in Part II are NO, STOP, the facility is a CERCLA eligible site.

If answer to #2 or #3 is YES, STOP, the facility is a CERCLA eligible site.

If answer #2 and #3 are NO and any OTHER answer is YES, site is RCRA, continue to Part III.

III. RCRA SITES ELIGIBLE FOR NPL	<u>Yes</u>	<u>No</u>
----------------------------------	------------	-----------

Has the facility owner filed for bankruptcy under federal or state laws?	___	___
--	-----	-----

Has the facility lost RCRA authorization to operate or shown probable unwillingness to carry out corrective action?	___	___
---	-----	-----

Is the facility a TSD that converted to a generator, transporter or recycler facility after November 19, 1980?	___	___
--	-----	-----

**SSI PHASE I  
RECONNAISSANCE DOCUMENTATION CHECKLIST**

This information is required for all SSI Phase Is. Much of it will be detailed in your letter report, logbook, or topo map. In such cases, provide only brief descriptions and reference citations on the checklist to avoid duplication. Cite the source for all information obtained for all sections. Lists of HRS-specific definitions and sensitive environment identifications are attached.

Site Name: Kentucky Petroleum Products

City, County, State: Louisville, Jefferson County, Kentucky

EPA ID No.: KYD061564001

Person responsible for form: Wendell C. McLendon

Date: 12/19/90

**DESKTOP DATA COLLECTION**

(Can be done before or after recon. Include attachments as necessary).

**I. Groundwater Use** (See project geologist for this information)

- Identify aquifer(s) of concern.

The alluvium in the Ohio River Flood Plain.

- Identify any areas of karst terrain within the 4-mile site radius, and confining layers and hydraulic interconnections within 2 miles of the site.

None.

**II. Surface Water Use**

- Identify uses along the 15-stream-mile surface water pathway (i.e. drinking water, fishing, irrigation, industrial).

There are no surface water intakes along the 15-mile surface water pathway.

- Identify any designated recreational areas, sensitive environments, and fisheries along the surface water pathway. Specify whether fishing is recreational, subsistence, or commercial. Information for smaller water bodies can be confirmed or obtained from local sources during the recon.

There are no designated recreational areas or sensitive environments along the surface water pathway.



### III. Sensitive Environments

- Identify any sensitive environments within 4 radial miles of the site (See Table 4-23 of the February 15, 1990 HRS Draft Final Rule, attached). Remember, sensitive environments are not limited to critical habitats.

### DRIVE-BY RECONNAISSANCE DATA COLLECTION

(This information should be recorded in logbooks with attachments).

#### I. Groundwater Use (This information can generally be obtained from local water departments, or city hall in rural areas).

- Identify on copies of topos the extent of all municipal systems and areas served by private wells within 4 miles of the site.

Copies of the area served by the Louisville Water Company are located in files.

- Locate on copies of topos all municipal well locations in the site area, including any wells of a blended system >4 miles from site. Specify if water from these wells is partially or fully blended prior to or during distribution, and if any surface water intakes contribute to a blended system (whether or not they draw from the target sw pathway).

No municipal wells were located.

- Note the depth, pumpage, and population served for all municipal wells within the 4-mile site radius. Complete well survey forms.

- Document other groundwater uses (e.g. irrigation, industrial).

There are no industrial wells within 4 miles of the facility.

#### II. Surface Water Use

- Identify on topos the 15-mile surface water pathway.

- Identify and locate on topos any surface water intakes within 15 miles downstream of the site (to be obtained from local water department).

No surface water intakes are located within 15 miles downstream of the facility.

### III. Site and Area Use Data Collection (May be obtained before or during recon)

- Describe any barriers to travel (e.g. rivers) within 1 mile of the site (consult topo).

There are no rivers or other barriers to travel within 1 mile of the facility.

- Describe population within the immediate site vicinity and within the 4-mile radius (e.g. sparsely populated rural areas, commercial/industrial areas, densely populated urban areas, etc.).

The facility is in an industrial/commercial area, the population within 3 miles is 63,410 and within 4 miles is 122,977. The population within a 1-mile radius is estimated at be 467.

- Obtain aerial photos of site and immediate vicinity whenever available (from county offices).

No aerial photos were obtained.

- Note if the facility is on sewers or septic tanks (consult water or public works department).

- Obtain current property owner information from the county tax assessor's office.

See Project Note to Kentucky Petroleum Products.

*PA:Thx - 8404*  
*PA:Sm 8408*  
*low*

MEMORANDUM

TO: Barry Burrus, Chief *BB*  
 Uncontrolled Sites Section

FROM: Jim Jarman, Geologist *JK*  
 Uncontrolled Sites Section

DATE: March 27, 1984

SUBJECT: Preliminary Assessment Report for Kentucky Petroleum  
 Products - Jefferson County

Kentucky Petroleum Products is a waste oil recycler that operates several tank trucks which collect waste oil and delivers it to a small storage facility (about 15 tanks). The waste oil is stored and later sold to various companies that either refine it into petroleum products, place it in a waste oil fuel program, or burn it as a waste oil fuel. The firm is now known as Kentucky Petroleum Wastes, Inc.

Presently, the site is being handled by the Enforcement Branch of the Kentucky Division of Waste Management. Numerous violations have been documented by field personnel. A preliminary assessment and site inspection completed in 1980 did not designate any action to be taken. Tank waste oil samples taken in February 1984 indicate high levels of trichloroethylene to be present.

After reviewing the information within the division and talking with enforcement personnel, I am recommending this site be given a low priority ranking for a site inspection. The presence of trichloroethylene in these storage tanks could present an environmental problem if the contents are released.

JJ:da

cc: John Brooks  
 Millie Archer  
 EPA-Atlanta  
 File



POTENTIAL HAZARDOUS WASTE SITE  
PRELIMINARY ASSESSMENT  
PART 1 - SITE INFORMATION AND ASSESSMENT

I. IDENTIFICATION

01 STATE 02 SITE NUMBER  
KY D061564001

II. SITE NAME AND LOCATION

01 SITE NAME (Legal, common, or descriptive name of site) Kentucky Petroleum Products		02 STREET, ROUTE NO., OR SPECIFIC LOCATION IDENTIFIER 4019 Blanton Lane			
03 CITY Louisville	04 STATE KY	05 ZIP CODE 40216	06 COUNTY Jefferson	07 COUNTY CODE 056	08 CONG DIST
09 COORDINATES LATITUDE 38° 08' 50.0		LONGITUDE 085° 44' 15.0			
10 DIRECTIONS TO SITE (Starting from nearest public road) Facility Location is intersection Knopp Avenue & Grade Lane - Storage tanks					

III. RESPONSIBLE PARTIES

01 OWNER (if known) Kentucky Petroleum Products		02 STREET (Business, mailing, residential) 4019 Blanton Lane			
03 CITY Louisville	04 STATE KY	05 ZIP CODE 40216	06 TELEPHONE NUMBER (502) 447-1802		
07 OPERATOR (if known and different from owner) SAME		08 STREET (Business, mailing, residential)			
09 CITY	10 STATE	11 ZIP CODE	12 TELEPHONE NUMBER ( )		
13 TYPE OF OWNERSHIP (Check one) <input checked="" type="checkbox"/> A. PRIVATE <input type="checkbox"/> B. FEDERAL: _____ (Agency name) <input type="checkbox"/> C. STATE <input type="checkbox"/> D. COUNTY <input type="checkbox"/> E. MUNICIPAL <input type="checkbox"/> F. OTHER: _____ (Specify) <input type="checkbox"/> G. UNKNOWN					

14 OWNER/OPERATOR NOTIFICATION ON FILE (Check of this entry)  
☐ A. RCRA 3001 DATE RECEIVED: \_\_\_\_\_ MONTH DAY YEAR ☐ B. UNCONTROLLED WASTE SITE (CERCLA 103(c)) DATE RECEIVED: \_\_\_\_\_ MONTH DAY YEAR ☒ C. NONE

IV. CHARACTERIZATION OF POTENTIAL HAZARD

01 ON SITE INSPECTION <input checked="" type="checkbox"/> YES DATE 02, 29, 84 <input type="checkbox"/> NO MONTH DAY YEAR		BY (Check of this entry) <input type="checkbox"/> A. EPA <input type="checkbox"/> B. EPA CONTRACTOR <input type="checkbox"/> C. STATE <input type="checkbox"/> D. OTHER CONTRACTOR <input type="checkbox"/> E. LOCAL HEALTH OFFICIAL <input type="checkbox"/> F. OTHER: _____ (Specify) CONTRACTOR NAME(S): _____			
02 SITE STATUS (Check one) <input checked="" type="checkbox"/> A. ACTIVE <input type="checkbox"/> B. INACTIVE <input type="checkbox"/> C. UNKNOWN		03 YEARS OF OPERATION BEGINNING YEAR _____ ENDING YEAR _____ <input checked="" type="checkbox"/> UNKNOWN			

04 DESCRIPTION OF SUBSTANCES POSSIBLY PRESENT, KNOWN, OR ALLEGED  
Waste oil & Trichloroethylene mixed with water.

05 DESCRIPTION OF POTENTIAL HAZARD TO ENVIRONMENT AND/OR POPULATION  
Spills - flora & fauna destruction; Groundwater contamination

V. PRIORITY ASSESSMENT

01 PRIORITY FOR INSPECTION (Check one. If high or medium is checked, complete Part 2 - Waste Information and Part 3 - Description of Hazardous Conditions and Remedial Action)  
☐ A. HIGH (Inspection required promptly) ☐ B. MEDIUM (Inspection required) ☒ C. LOW (Inspect on time evaluate basis) ☐ D. NONE (No further action needed, complete current disposition form)

VI. INFORMATION AVAILABLE FROM

01 CONTACT Millie ARCHER	02 OF (Agency/Organization) KYREPC - Louisville Field Office	03 TELEPHONE NUMBER (502) 588 4251
04 PERSON RESPONSIBLE FOR ASSESSMENT Jim Jarman	05 AGENCY KYREPC	06 ORGANIZATION Div. WASTE MGT.
07 TELEPHONE NUMBER (502) 564-6716		08 DATE 03, 27, 84 MONTH DAY YEAR



☐ I. HIGHLY VOLATILE  
☐ J. EXPLOSIVE  
☐ K. REACTIVE  
☐ L. INCOMPATIBLE  
☒ M. NOT APPLICABLE



POTENTIAL HAZARDOUS WASTE SITE  
PRELIMINARY ASSESSMENT  
PART 3 - DESCRIPTION OF HAZARDOUS CONDITIONS AND INCIDENTS

I. IDENTIFICATION

01 STATE 02 SITE NUMBER  
Ky D061564001

II. HAZARDOUS CONDITIONS AND INCIDENTS

01 ☐ A. GROUNDWATER CONTAMINATION

03 POPULATION POTENTIALLY AFFECTED: \_\_\_\_\_

02 ☐ OBSERVED (DATE: \_\_\_\_\_)

04 NARRATIVE DESCRIPTION

☐ POTENTIAL

☐ ALLEGED

01 ☐ B. SURFACE WATER CONTAMINATION

03 POPULATION POTENTIALLY AFFECTED: \_\_\_\_\_

02 ☐ OBSERVED (DATE: \_\_\_\_\_)

04 NARRATIVE DESCRIPTION

☐ POTENTIAL

☐ ALLEGED

01 ☐ C. CONTAMINATION OF AIR

03 POPULATION POTENTIALLY AFFECTED: \_\_\_\_\_

02 ☐ OBSERVED (DATE: \_\_\_\_\_)

04 NARRATIVE DESCRIPTION

☐ POTENTIAL

☐ ALLEGED

01 ☐ D. FIRE/EXPLOSIVE CONDITIONS

03 POPULATION POTENTIALLY AFFECTED: \_\_\_\_\_

02 ☐ OBSERVED (DATE: \_\_\_\_\_)

04 NARRATIVE DESCRIPTION

☐ POTENTIAL

☐ ALLEGED

01 ☐ E. DIRECT CONTACT

03 POPULATION POTENTIALLY AFFECTED: \_\_\_\_\_

02 ☐ OBSERVED (DATE: \_\_\_\_\_)

04 NARRATIVE DESCRIPTION

☐ POTENTIAL

☐ ALLEGED

01 ☐ F. CONTAMINATION OF SOIL

03 AREA POTENTIALLY AFFECTED: \_\_\_\_\_  
(Address)

02 ☐ OBSERVED (DATE: \_\_\_\_\_)

04 NARRATIVE DESCRIPTION

☐ POTENTIAL

☐ ALLEGED

01 ☐ G. DRINKING WATER CONTAMINATION

03 POPULATION POTENTIALLY AFFECTED: \_\_\_\_\_

02 ☐ OBSERVED (DATE: \_\_\_\_\_)

04 NARRATIVE DESCRIPTION

☐ POTENTIAL

☐ ALLEGED

01 ☐ H. WORKER EXPOSURE/INJURY

03 WORKERS POTENTIALLY AFFECTED: \_\_\_\_\_

02 ☐ OBSERVED (DATE: \_\_\_\_\_)

04 NARRATIVE DESCRIPTION

☐ POTENTIAL

☐ ALLEGED

01 ☐ I. POPULATION EXPOSURE/INJURY

03 POPULATION POTENTIALLY AFFECTED: \_\_\_\_\_

02 ☐ OBSERVED (DATE: \_\_\_\_\_)

04 NARRATIVE DESCRIPTION

☐ POTENTIAL

☐ ALLEGED



POTENTIAL HAZARDOUS WASTE SITE  
PRELIMINARY ASSESSMENT  
PART 3 - DESCRIPTION OF HAZARDOUS CONDITIONS AND INCIDENTS

I. IDENTIFICATION

01 STATE 02 SITE NUMBER

KY D061564001

II. HAZARDOUS CONDITIONS AND INCIDENTS (Continued)

01 ☐ J. DAMAGE TO FLORA  
04 NARRATIVE DESCRIPTION

02 ☐ OBSERVED (DATE: \_\_\_\_\_)

☐ POTENTIAL

☐ ALLEGED

01 ☐ K. DAMAGE TO FAUNA  
04 NARRATIVE DESCRIPTION (Include name(s) of species)

02 ☐ OBSERVED (DATE: \_\_\_\_\_)

☐ POTENTIAL

☐ ALLEGED

01 ☐ L. CONTAMINATION OF FOOD CHAIN  
04 NARRATIVE DESCRIPTION

02 ☐ OBSERVED (DATE: \_\_\_\_\_)

☐ POTENTIAL

☐ ALLEGED

01 ☐ M. UNSTABLE CONTAINMENT OF WASTES  
(Spills/runoff/leaking drums/leaking drums)  
03 POPULATION POTENTIALLY AFFECTED: \_\_\_\_\_

02 ☐ OBSERVED (DATE: \_\_\_\_\_)

☐ POTENTIAL

☐ ALLEGED

04 NARRATIVE DESCRIPTION

01 ☐ N. DAMAGE TO OFFSITE PROPERTY  
04 NARRATIVE DESCRIPTION

02 ☐ OBSERVED (DATE: \_\_\_\_\_)

☐ POTENTIAL

☐ ALLEGED

01 ☐ O. CONTAMINATION OF SEWERS, STORM DRAINS, WWTPs  
04 NARRATIVE DESCRIPTION

02 ☐ OBSERVED (DATE: \_\_\_\_\_)

☐ POTENTIAL

☐ ALLEGED

01 ☐ P. ILLEGAL/UNAUTHORIZED DUMPING  
04 NARRATIVE DESCRIPTION

02 ☐ OBSERVED (DATE: \_\_\_\_\_)

☐ POTENTIAL

☐ ALLEGED

05 DESCRIPTION OF ANY OTHER KNOWN, POTENTIAL, OR ALLEGED HAZARDS

III. TOTAL POPULATION POTENTIALLY AFFECTED: \_\_\_\_\_

IV. COMMENTS

This facility is now Regulated by RCRA and is now under enforcement proceedings in the Division's Enforcement Branch.  
Site has 15(t) Tanks with waste in them - Tanks are rusting; spills are evident according

V. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

KYAREPC FILES  
Louisville Field  
Personnel - Enforcement  
files.

To pictures in Division files. Sample analysis of 3/15/89 shows high concentrations of Tri-chloroethylene in tank samples. The spillage area would be good sampling locations for future inspections.





"Rite in the Rain."  
WEATHERPROOF



# LEVEL

NOTEBOOK NO. 311

F4-2169 TDD-F4-9001-115

KENTUCKY PETROLEUM PRODUCTS

LOUISVILLE, JEFFERSON COUNTY, KENTUCKY

PROTEST MANAGER: WENDELL C. MCLENDON

APRIL 18, 1990

**NOTE: ALL LANGUAGE SHOULD BE FACTUAL AND OBJECTIVE**

- FILE NO. 44-38861-100000  
ALL INFORMATION CONTAINED HEREIN IS UNCLASSIFIED

Interviewed C. M. Hendon in 4-18-90  
Interviewed C. M. Hendon

Stirling Fine 4-14-10

4-18-90

000001

000002

1010 4-18-90

WEATHER CLEAR AND COOL.

ARRIVED AT KY. PETROLEUM AT 1010  
WEDNESDAY APRIL 18, 1990

KY PETROLEUM WASTE, INC. IS LOCATED AT  
6900 GRADE CREEK AT KNOWN AVE.  
INTERSECTION.

SITE SURROUNDED BY CHAIN LINK FENCE  
WITH GATED GATE ON S SIDE, AND GATED  
GATE ON WEST (FRONT) SIDE. A METAL  
OFFICE BUILDING ON WEST SIDE.  
SITE CONSISTS OF A SERIES OF STORAGE  
TANKS. STEAM? (VAPORS?) BEING EMITTED  
BEHIND TANKS AT PUMPHOUSE.

METAL 45 FT. TANKER USED FOR STORAGE  
IS PARKED AT BACK OF PROPERTY ALONG  
NORTH FENCE. TANKER TRAILER PARKED  
ALONG BACK FENCE ON EAST SIDE.

4-18-90 W

SEE THE MAP FOR TANK LOCATIONS.

SMALL TREES GROWING ALONGSIDE FENCE THAT  
SURROUNDS SITE. GRASS AND PASTURE GROWING  
UNDER HOLOGRAPHIC TANKS BEHIND METAL BUILDING.

POWER LINES ON E SIDE OF GRADE CREEK,  
S SIDE OF KNOWN AVE., AND ALONG N  
CORNER OF SITE.

FOR BESSON RIVER SYSTEM AND SOURCE  
ON E S AT CORNER OF GRADE CREEK  
AND KNOWN AVE.  
DIRT LANE THROUGH PASTURE, DRIVE LOOK  
FOR WEST.

RIVER KNOWNS, LUMBER, LOCATED ADJACENT  
TO SITE ON NORTH SIDE.

4-18-90 W

000003



000000

Case No. \_\_\_\_\_

Low Concentration yes/no

\_\_\_\_\_

Media

Soil  
Water

Lab

\_\_\_\_\_

Airbill No.

\_\_\_\_\_

Airbill No.

\_\_\_\_\_

FY-2001-115

4-18-90

10/0

KY Petroleum Products

Louisville, Ky

Petroleum Tank yard, looking west  
Across Kuonp Ave

FY-2001-115

4-18-90

10/0

W. McQuinn

2

KY Petroleum Products

Louisville, Ky

Tank yard showing pump  
house and steam emissions

FY-2001-115

4-17-98

10/0

W. McQuinn

3

KY Petroleum Products

Louisville, Ky

FRONT OF FACILITY

000001

000042

F4-9001-115  
 4-18-90 By Whose W. MCKENDON  
 1010 moved to map 4  
 KY PETROLEUM PRODUCTS  
 LOUISVILLE, KY  
 NORTH SIDE OF FACILITY AND  
 ADJACENT PROPERTY

F4-9001-115  
 Date 4-18-90 W. MCKENDON  
 Time 1010 S  
 Location KY PETROLEUM PRODUCTS  
 LOUISVILLE, KY  
 Picture of TANK YARD

F4-9001-115  
 Date 4-18-90 W. MCKENDON  
 Time 1010 6  
 Location KY PETROLEUM PRODUCTS  
 LOUISVILLE, KY  
 TANK YARD, STORAGE  
 TANKS

F4-9001-115  
 4-18-90 W. MCKENDON  
 1010 7  
 KY PETROLEUM PRODUCTS  
 LOUISVILLE, KY  
 TANK YARD, BACK OF  
 OFFICE

F4-9001-115  
 4-18-90 W. MCKENDON  
 1010 8  
 KY PETROLEUM PRODUCTS  
 LOUISVILLE, KY  
 TANK YARD

F4-9001-115  
 4-18-90 W. MCKENDON  
 1010 9  
 KY PETROLEUM PRODUCTS  
 LOUISVILLE, KY  
 TANK YARD

000043

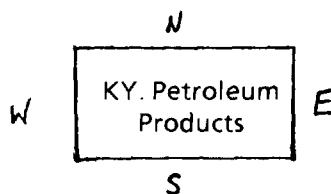
**NUS CORPORATION  
SUPERFUND DIVISION****PROJECT NOTES**

**TO:** File - Kentucky Petroleum Products **DATE:** November 1, 1990

**FROM:** Wendell C. McLendon *WCM*

**SUBJECT:** Property Ownership of Facility and Surrounding Property, From Deed Books at Jefferson County Courthouse

**REFERENCE:** Kentucky Petroleum Products: owned by Leo J. and Julia C. Shircuff



**Property to West Owned By:** Dixie Warehouse and Cartage Company

**Property to East Owned By:** Lester W. Inman, Sr. or  
1/2 By: James L. and Martha S. Mattingly  
1/2 By: Allen C. and Sylvia Mattingly

**Property to the South Owned By:** Larry W. Embry  
J. J. Simon

REFERENCE # 4

BEST MANAGEMENT PRACTICES PLAN

KENTUCKY PETROLEUM WASTE, INC.  
PETROLEUM RECYCLING PLANT  
LOUISVILLE, KENTUCKY

APPROVED BY:   
C. R. SHIRCLIFF  
PLANT MANAGER



## INTRODUCTION

In accordance with Kentucky Pollutant Discharge Elimination System (KPDES) Permit No. KY 0073172 for Kentucky Petroleum Waste, Inc., this plan describes potential sources of pollution to surface waters through discharges, leaks or spills of petroleum products. The plan further identifies measures to control or prevent discharges of such materials to surface waters.

## DESCRIPTION OF FACILITY

Name: Kentucky Petroleum Waste, Inc.  
Type: Petroleum Recycling for Energy Recovery  
Location: 6911 Grade Lane  
Louisville, KY 40213

Kentucky Petroleum Waste, Inc. produces fuels for industrial uses, both on and off specification. Petroleum products, both new and used are recovered from service facilities, industrial processes, water reclamation, and emergency spills. These products are then processed and blended with used or new fuels to produce a uniform product for energy recovery. [REDACTED]

Products are then shipped by tank trucks from our facility to customers who have obtained requisite permits.

An attached map shows our location in the Knopp-Melton Avenue Industrial Park. Storm water runoff from the facility discharges through a drainage ditch approximately 1/4 mile to Pond Creek and eventually into the Ohio River. (See Attachment A.)

## POLICY STATEMENT

Kentucky Petroleum Waste, Inc. has been involved in petroleum reclamation since 1962. Its founder, Leo J. Shircliff, has been involved in petroleum handling and transport since 1952.

It is our goal to provide a market for reclaimable petroleum products. To do this, we must satisfy the needs of both our producing customers and fuel consumers. In essence, we provide a conduit between producers and consumers and, also, an alternative to both proper and improper disposal. Along with providing a valuable service to commerce in the Commonwealth, we conduct our business in a manner that is responsible, safe, and in compliance with all applicable laws and regulations. In doing so, we strive to have as limited an adverse impact on the environment as is practicable. To achieve these goals, we have set forth in this plan procedures which now exist and have defined procedures to minimize the environmental impact of abnormal conditions or environmental incidents.

### BMP COMMITTEE

Plant personnel involved in this plan are:

		<u>Home Phone</u>
Plant Manager:	Charles R. Shircliff	502/245-2030
Chairman:	Leo J. Shircliff	502/448-4733
Transportation Coordinator:	James L. Shircliff	502/935-4233
Operator:	Beverly A. Coffman	812/732-4399

Plant Phone #: 502/367-7766

The BMP Committee have the following responsibilities:

1. To provide assistance in developing, implementing and maintaining a BMP plan;
2. To establish BMP incident reporting procedures;
3. To identify potential spill sources;
4. To establish plant incident response, cleanup, and notification procedures;
5. To establish monitoring and records procedure;
6. To review new construction and changes in processes and procedures; and
7. To evaluate the effectiveness of the BMP plan and institute any changes.

### RISK IDENTIFICATION AND ASSESSMENT

The primary areas of risk at our plant are:

- A. The loading dock and immediate area;
- B. The storage tanks and containment areas; and
- C. The processing vessels, pumps, valves, and pipelines.

The loading dock and immediate area are located on a concrete basin which drains directly to a three stage oil separation unit consisting of one 2,000 gallon tank and three 550 gallon tanks. Total containment capacity is 3500 gallons. The bulk storage tank area and all drainage paths are constructed

of concrete. These areas also drain to the oil separation unit. The entire area is also diked and has a total containment capacity of 30,000+ gallons.

Drivers are responsible for loading and off-loading of tankers. Storage tank levels are checked before pumping begins. When loading, tank levels are constantly monitored, and if filled to capacity, adequate space is allowed for expansion due to temperature change. The same procedure is followed in off-loading. The pump can be controlled from inside or outside of the pump room, as well as from the off-loading dock. Hoses are drained and all valves are closed after each load. Tank numbers are then noted for inventory control.

When oils are transferred from bulk storage to the process storage tank (16,000 gallon capacity), a dial gauge on the tank is monitored to indicate the oil level. However, this tank is a pressure tank with a float valve on the vent pipe and cannot overflow. All pumps are equipped with pressure release bypasses.

All oil process lines are schedule 40 threaded pipe or schedule 80 welded pipe. Heat exchangers are shell and tube type and are rated 300+ psi. Pumps are adjusted to 50 psi. When service is required, drip pans or drainage basins are used. When oils are diverted to the evaporator, the oil level is monitored. However, any overflow from the evaporator would be collected in a vacuum/condensate storage tank (11,500 gallons capacity) which is rated for 30 inches of vacuum. Our vacuum pump is capable of 15 inches vacuum. This tank also is equipped with a dial gauge. The capacity of this tank will never be used completely because the vacuum storage is important to our processing. We anticipate emptying this tank when truck load amounts accumulate (approximately 7,000 gallons). At present rates, this will be done approximately once a year. This portion of our plant was constructed in 1986 and put into service in January 1987.

- Processed oils are metered into two (2) finished product tanks (30,000 gallons each capacity). These tanks are constructed as pressure tanks (1 1/8" walls) but are now used at atmospheric pressure. They are contained by a concrete dike. Precipitation is pumped to a water separation unit in the bulk storage area. These tanks are filled at a rate between 10 and 20 G.P.M. Although their level may be determined by meter readings, they are visually checked on the hour until 75% capacity is reached. They are then visually checked every 15 minutes. At 500 gallons from capacity, they are constantly monitored until capacity is reached.

- Operations in processing and finished product storage are the responsibility of the operator on duty. The operator also reports any problems, such as leaky joints, valve stems, or pump packing that cannot be immediately repaired. These are assigned for maintenance. If this type of problem cannot be controlled through use of drip pans, absorbent clays, etc., immediate attention is required. Small spills are reported to the Plant

Manager and cleanup assigned if warranted. Any spill which poses a possibility of discharge off-site or is greater than 50 gallons, shall be immediately reported to local authorities and to the Plant Manager. All steps shall then be taken to contain and minimize adverse affects. This will include closing discharge valves, use of vacuum storage, system and absorbent clays. An accident report will be filed in the event of any such occurrence. (See enclosed Accident Report Form.)

### EMPLOYEE TRAINING

Our six full time personnel have over 100 years combined experience in their respective fields. We are a family held corporation and employee turn over is nil. Several of us have attended the hearings sponsored by the E.P.A. in Frankfort, Georgetown, and Louisville. We have all read and debated new regulations as they have been set forth. On March 19, 1987, all personnel attended a seminar on risk identification and recent changes in E.P.A. guidelines presented by Ronald VanStockum, an attorney and environmental consultant in Louisville. We will continue these practices as needed.

We are well trained in spill control as it is a service we offer our customers and have for 25 years. All spills or releases will be documented with an accident investigation report (see attached copy) from originator to Plant Manager. The Plant Manager is then responsible to evaluate the incident, make any changes in procedure if necessary, and make any reports to regulatory agencies.

### INSPECTION AND MAINTENANCE

All personnel are required to report any problems with any equipment to the Plant Manager. Inspections are performed during routine use of equipment, and during scheduled maintenance intervals. Any major overhaul or maintenance is performed during shutdown for boiler inspection and maintenance if practicable.

- Process operators also perform daily inspections before start-up when operating Processor. Items inspected daily include gauges and flow meters, pump packing and shaft lube, belt drive tensions, valve stem packing and operation of steam traps and condensate returns. Product quality is also inspected upon start-up through sampling and analysis. All samples taken are returned to storage after analysis.

Inspection of storage vessels is performed weekly. All bulk storage is above ground. In the last ten years, only one leak has been discovered. This was a very small leak on an older tank when it was first put into service. It was immediately emptied and repaired. The nature of our product discourages any corrosion in storage vessels. Leaks generally involve valve stems and threaded joints. These are simply tightened or repacked and generally show no further problem.

### GOOD HOUSEKEEPING

All maintenance procedures involve cleanup as a final step. Equipment out-of-service, spare parts, as well as tools, are kept in designated areas. Any oils or greases in work areas are promptly cleaned up with the use of rags or absorbent clays to prevent tracking and safety hazards.

Yearly appearance improvement plans are made during personnel meetings. Plans are developed by input of all involved and implemented as funds and manpower are available.

[REDACTED]

A Material Safety Data Sheet for our typical final product is enclosed along with a more recent chemical analysis. Our products are not reactive, nor is there any problem with compatibility.

### SECURITY

The facility is enclosed by 7 foot link fencing that is topped by three strands of barb wire. Gates are padlocked at night. Security lights of "dusk-to-dawn" type light the entire area at night. Signs on the gates state the materials stored and necessary emergency phone numbers.

### MATERIAL INVENTORY

(See Site Plan - Attachment B)

We use 21 storage tanks for bulk storage of fuels, oils, and fuel oil blends as follows:

- 1 - 2,000 gallon
- 14 - 5,000 gallon
- 2 - 8,000 gallon
- 3 - 10,000 gallon
- 1 - 20,000 gallon

We use two (2) process related tanks:

1 - 16,000 gallon tank for process transfer and heating of product

1 - 11,500 gallon tank for vacuum and condensate storage

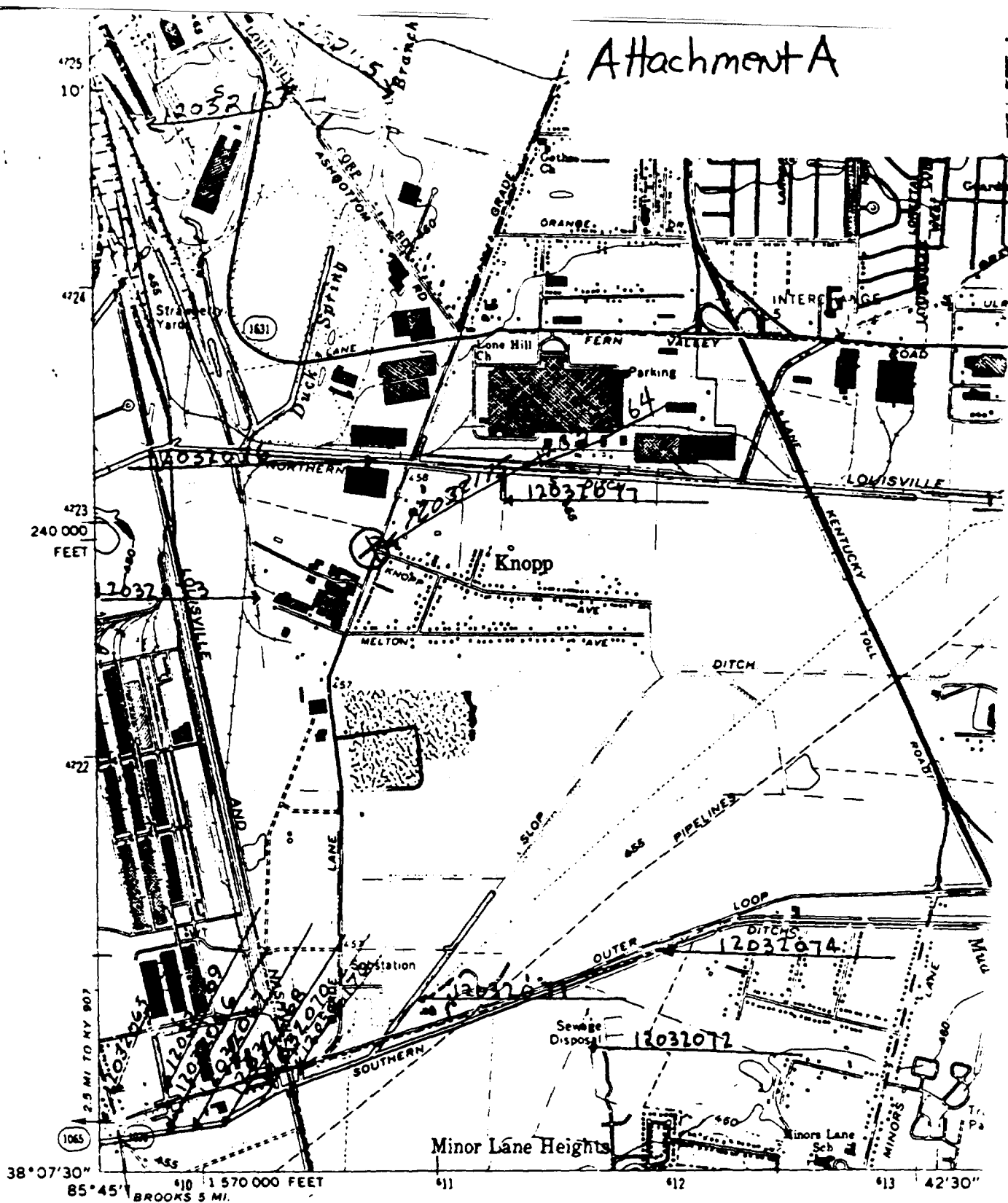
We use two (2) tanks of the finished product:

2 - 30,000 gallon

All storage tanks are in diked containment areas.

There are also small fuel oil tanks and drums which we keep for use by potential customers. These are stored on-site and are empty. Motor oil, gear oil, antifreeze and kerosene for our uses are also stored on-site.

# Attachment A



(VALLEY STATION)  
3880 III SE

Mapped by the Army Map Service and the Geological Survey

Edited and published by the Geological Survey

Control by USGS, USC&GS, USCE, and the City of Louisville

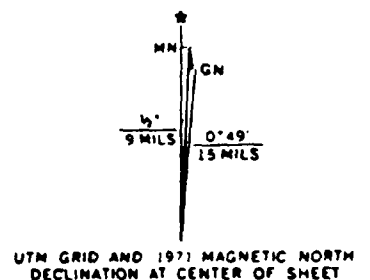
Topography by photogrammetric methods from aerial photographs taken 1947. Field checked 1950

Revised by the Geological Survey 1965

Polyconic projection. 1927 North American datum  
10,000-foot grid based on Kentucky coordinate system, north zone  
1000-meter Universal Transverse Mercator grid ticks, zone 16, shown in blue

Fine red dashed lines indicate selected fence and field lines where generally visible on aerial photographs. This information is unchecked

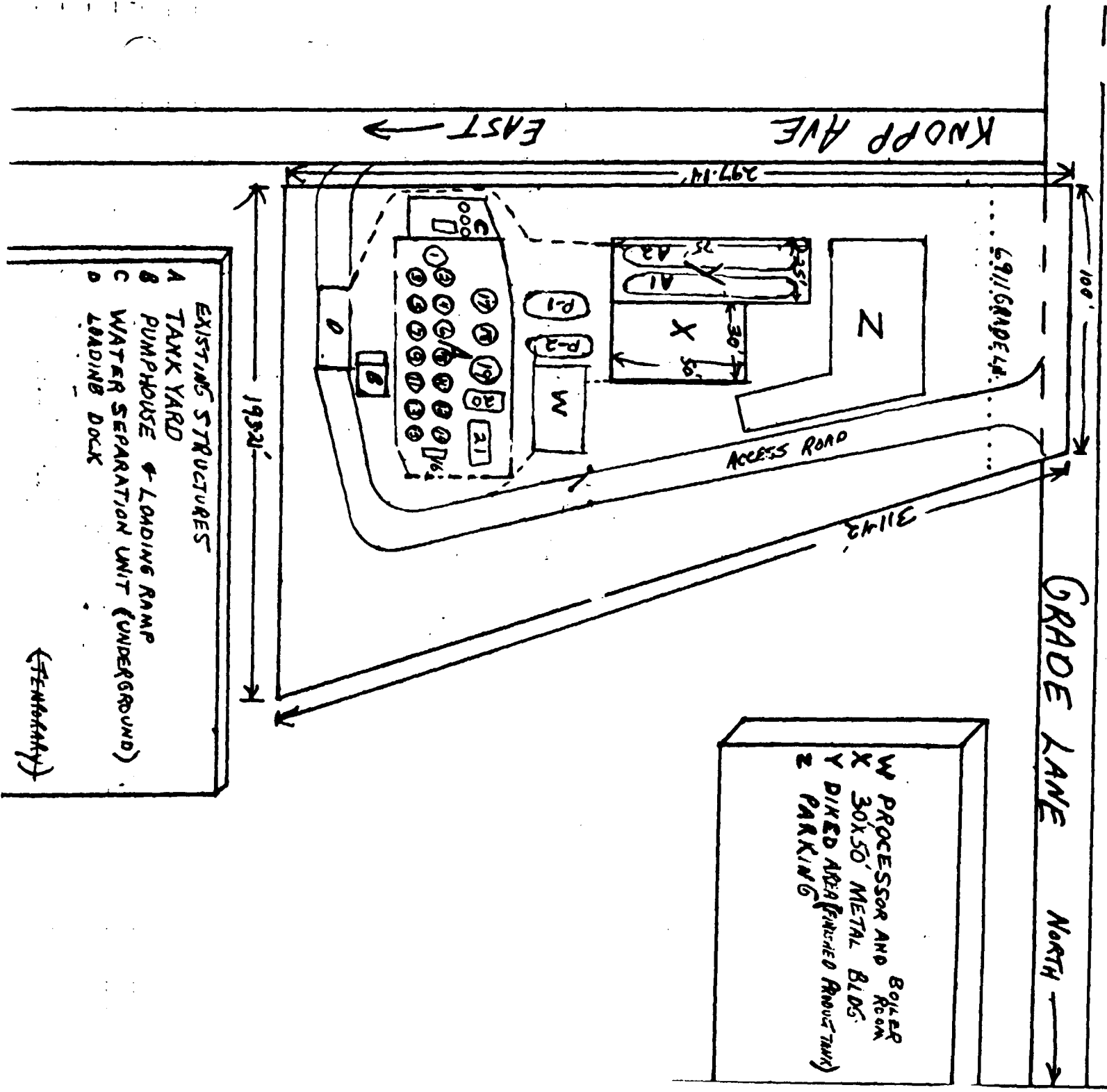
Red tint indicates areas in which only landmark buildings are shown



KENTUCKY PETROLEUM  
6911 GRADE LANE  
LOU. KY. 40215

GRADE LANE NORTH

BOILER ROOM  
W PROCESSOR AND  
X 30X50' METAL BLDG.  
Y DIKED AREA (FINISHED FLOOR TANK)  
Z PARKING





# MATERIAL SAFETY DATA SHEET

## Kentucky Petroleum Waste

For health Hazard Information Call:

For Other Information Call:

---

### Section I. Identification

Product Name: Reclaimed Oil DOT No. 1993

Chemical Name: Reclaimed Oil

---

### Section II. Product and Component Hazard Data

A. Component	Percent	TLV	Notes
Lubricating Oil	75. %	Not Established	
Fuel Oils	25. %	Not Established	
Benzene	<0.1	10 ppm	1
Toluene	<0.1	200 ppm	
Xylene	<0.1	100 ppm	
Lead	<0.1	0.15 mg/cu m	
Dichloromethane	<0.1	100 ppm	1
Trichloroethylene	<0.1	50 ppm	1
Carbon Terachloride	<0.1	5 ppm (skin)	1
Perchloroethylene	<0.1	50 ppm	1

Note 1: This compound is a suspected carcinogen

---

### Section III. Physical Data

Initial Boiling Point: >300 deg F Specific Gravity: 0.9

Percent Volitiles: > 98. %

---

#### Section IV. Fire and Explosion Hazard

Flash Point: 180 to 212 deg F Lower Explosion Limit: 2.0

Extinguishing Media: Alcohol Foam, Carbon Dioxide, Dry Chemical

Hazardous Decomposition Products:

#### Special Firefighting Precautions:

Wear self-contained breathing apparatus with full facepiece in pressure demand mode.

---

#### Section V. Health Hazard Data

##### Effects of Overexposure:

Eyes: Can cause severe irritation, redness, tearing, blurred vision.

Skin: Can cause irritation

Breathing: Excessive inhalation of vapors can cause nasal and respiratory irritation, dizziness, weakness, fatigue, nausea, headache, possible unconsciousness, and even asphyxiation.

Swallowing: Can cause gastrointestinal irritation, nausea, vomiting, and diarrhea.

##### First Aid:

If on Skin: Thoroughly wash exposed area with soap and water. Remove contaminated clothing. Launder contaminated clothing before re-use.

If in Eyes: Flush With large amounts of water, lifting upper and lower lids occasionally, get medical attention

If Swallowed: Immediately drink two glasses of water. Get medical attention immediately.

If Breathed: If affected remove individual to fresh air. If breathing is difficult, administer oxygen. If breathing has stopped, give artificial respiration. Get medical attention.

---

## Section VI. Reactivity

Hazardous polymerization: Does not occur

Stability: stable

Incompatability: Aviod contact with oxidizers.

---

## Section VII. Spill Procedures

Eliminate all ignition sources. Persons not wearing protective equipment should be excluded from the area until clean-up is completed. Stop leak at source. Contain liquid spill with dikes to prevent spill from spreading. Pick up liquid with sand or floor absorbant. Shoval diking material in drums. Dispose of in a landfill according to Local, State, and Federal regulations.

## Section VIII. Protective equipment

Resperatory Protection: If the TLV of any component is exceeded, a NIOSH/MSHA jointly approved air supplied resperator is advised in absence of proper environmental controls. OSHA regulations allow the use of other NIOSH/MSHA reperators under certain conditions.

Ventilation: Provide sufficient mechanical ventilation to maintain exposure below TLVs.

Protective Gloves: Wear resistant gloves such as neoprene.

Eye Protection: Chemical spash goggles in complience with OSHA regulations are advised.

Other Protective Equipment: Wearing impervious clothing and boots is advised.

---

## Section IX. Special Precautions

Containers may be hazardous when empty.

Store at ambient temperature out of direct sunlight. Store as a flammable liquid.



RECEIVED FROM: Kentucky Petroleum Waste      DATE RECEIVED: 01/29/87  
SAMPLE TYPE: Oil      ANALYSIS NUMBER: 35379  
SAMPLED BY: Client      DATE REPORTED: 02/11/87

MARKS: 209  
Fuel Oil Blend

API Gravity @ 60°F	33.3
Specific Gravity @ 60°F	0.8586
lbs/gal	7.149
B.T.U./lb	17,767.
B.T.U./gal	127,016.
Sulfur Content	0.34 %
B.S.&W.	0.15 %
Viscosity @ 100°F	47.6 s.u.s.
Flash Point (P.M.C.C.)	101°F
Pour Point	-21°F
Halogen	0.09 %
Lead	3. ppm
Cadmium	1.7 ppm
Chromium	3.7 ppm
Arsenic	<0.01 ppm

Reviewed By: 

KENTUCKY PETROLEUM WASTE, INC.  
ACCIDENT/INCIDENT INVESTIGATION REPORT

REPORT NO. \_\_\_\_\_

REPORT DATE \_\_\_\_\_

ACCIDENT/INCIDENT INVESTIGATION DESCRIPTION

LOCATION \_\_\_\_\_ DATE \_\_\_\_\_ TIME \_\_\_\_\_ AM PM

TYPE OF ACCIDENT/INCIDENT \_\_\_\_\_ PERSON(S) INVOLVED \_\_\_\_\_

\_\_\_ Injury/Illness/Overexposure OR INJURED \_\_\_\_\_

\_\_\_ Spill/Release

\_\_\_ Equipment/Property Damage

\_\_\_ Fire

\_\_\_ Near Miss

\_\_\_ Performance/Procedure

Describe clearly what happened \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

BASIC CAUSE (CHECK APPLICABLE SPACES)

Performance

\_\_\_ Knowledge Deficiency

\_\_\_ Execution Deficiency

Procedures

\_\_\_ Lack of

\_\_\_ Inadequate

Equipment/Material/

Facility/Tools

\_\_\_ Improper

\_\_\_ Defective

Comments \_\_\_\_\_

\_\_\_\_\_

Immediate Action Taken \_\_\_\_\_

\_\_\_\_\_

Suggestions to Prevent Recurrence \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Date \_\_\_\_\_ Signature \_\_\_\_\_

LOSS ESTIMATION

Material Loss \_\_\_\_\_ Gal/Lbs of \_\_\_\_\_ \$ Value \_\_\_\_\_  
Reportable Quantity \_\_\_\_\_ Lbs. Report Made \_\_\_ Yes \_\_\_ No  
Lost to \_\_\_ Air \_\_\_ Sewer \_\_\_ Ground \_\_\_ Water Body  
Equipment Damage (Cost to Replace/Repair) \$ \_\_\_\_\_

ACTION PLAN TO PREVENT RECURRENCE

<u>Action Steps</u>	<u>Accountability</u>	<u>Date to Complete</u>
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

Comments \_\_\_\_\_

Date \_\_\_\_\_ Signature \_\_\_\_\_

Comments \_\_\_\_\_

Further Investigation Warranted Yes \_\_\_ No \_\_\_

Date \_\_\_\_\_ Signature \_\_\_\_\_

CORRECTIVE ACTION COMPLETED

Date \_\_\_\_\_ Signature \_\_\_\_\_

ROUTING: Copies 1, 2, 3

Copies 1, 2, 3

Xerox Copy

Originator \_\_\_\_\_ Immediate Supervisor \_\_\_\_\_ RSM/PM \_\_\_\_\_ HS&EA

Copy 1

Copy 2

Copy 3  
File

Additional  
Distribution  
As Needed

**NATURAL RESOURCES AND ENVIRONMENTAL PROTECTION CABINET  
DIVISION OF WASTE MANAGEMENT**

**INTERIM STATUS HAZARDOUS WASTE FACILITY REPORT**

FACILITY NAME: KENTUCKY Petroleum W/ BT EPA ID NUMBER: KYD06-156-409T PAGE 1 OF 2  
 FACILITY CLASSIFICATION: H.W. Fuel Manifolds, Off Spec. Use & Int. Petroleum  
 COUNTY: Jefferson DATE: 7/7/86 TIME: 2pm ROUTINE ☒ FOLLOW-UP ☐

INSPECTION ITEM	CITE*	C	NC	NA	COMMENTS
<b>I. REGISTRATION REQUIREMENTS</b>					
1. Operations consistent with registration	32:010 § 3		✓		
2. Hazardous waste determination	32:020 § 2		✓		
<b>II. GENERAL FACILITY REQUIREMENTS</b>					
1. General waste analysis	35:020 § 4		✓		
2. Security	35:020 § 5		✓		
3. General inspection requirements	35:020 § 6		✓		
4. Personnel training	35:020 § 7		✓		
<b>III. PREPAREDNESS AND PREVENTION</b>					
1. Maintenance & operation of required equipment	35:030 § 3, 4 & 5		✓		
2. Required aisle space	35:030 § 6	✓			
3. Local authority notification	35:030 § 7		✓		
4. Contingency plan:					
(a) Content	35:040 § 3 & 6		✓		
(b) Maintained at facility	35:040 § 4		✓		
(c) Distribution	35:040 § 4		✓		
(d) Implementation	35:040 § 2 & 7		✓		
<b>IV. PRETRANSPORT REQUIREMENTS</b>					
1. Packaging	32:030 § 1			✓	
2. Labeling	32:030 § 2			✓	
3. Marking	32:030 § 3			✓	
4. Waste accumulation:					
(a) 90-day accumulation	32:030 § 5	✓			
(b) Accumulation dated	32:030 § 5			✓	
(c) "Hazardous Waste" marking	32:030 § 5		✓		
<b>V. OPERATING RECORD/ MANIFEST</b>					
1. Generator manifest requirements:					
(a) Required information	32:020 § 2			✓	
(b) Proper execution	32:020 § 3 & 4			✓	
(c) Manifest maintained	32:040 § 1			✓	
(d) Exception report submitted & maintained	32:040 § 1 & 3			✓	
(e) International shipments	32:050 § 1			✓	
2. Generator annual report submitted & maintained	32:040 § 1 & 2			✓	

\*All regulatory cites are from Title 401 of the Kentucky Administrative Regulations. The number preceding the colon is the chapter reference. The number appearing after the colon is the regulation number. The symbol "§" is a reference to the section. For example, the reference to 32:010 § 3 should be read 401 KAR 32:010, Section 3.

INTERIM STATUS FACILITY INSPECTION REPORT

FACILITY NAME: KENTUCKY Petroleum Waste, Inc.

DATE: 7/7/86 PAGE 2 OF 2

INSPECTION ITEM	CITE*	C	NC	NA	COMMENTS
3. TSD manifest requirements:					
(a) TSD manifest execution	35:050 § 2		✓		
(b) Manifest discrepancies	35:050 § 3		✓		
(c) Unmanifested waste report	35:050 § 7		✓		
(d) Foreign source notification	35:020 § 3		✓		
4. Operating records:					
(a) Incoming waste records	35:050 § 4		✓		
(b) Waste location records	35:050 § 4		✓		
(c) Waste analysis records	35:050 § 4		✓		
(d) Contingency plan implementation report	35:050 § 4		✓		
(e) Inspection records	35:050 § 4		✓		
(f) Groundwater monitoring records	35:050 § 4		✓		
(g) Closure plan & cost estimate records	35:050 § 4		✓		
5. TSD annual report submitted & maintained	35:050 § 6		✓		

\*All regulatory cites are from Title 401 of the Kentucky Administrative Regulations. The number preceding the colon is the chapter reference. The number appearing after the colon is the regulation number. The symbol "§" is a reference to the section. For example, the reference to 32:010 § 3 should be read 401 KAR 32:010, Section 3.

VI. ATTACHMENTS: Container Facility Report ☐ Tank Facility Report ☐ Surface Impoundment Report ☐  
Waste Pile Report ☐ Land Treatment Facility Report ☐ Landfill Report ☐ Incinerator Report ☐  
Thermal Treatment Facility Report ☐ UIC Well Report ☐ Chemical, Physical & Biological Treatment Facility Report ☐

VII. GENERAL INFORMATION:

1. Photographs taken? ☐ YES ☒ NO ☐ N/A  
2. Samples collected? ☐ YES ☒ NO ☐ N/A  
3. Previous non-compliances corrected? ☐ YES ☒ NO ☐ N/A

VIII. COMMENTS INCLUDING REMEDIAL MEASURES AND EXPECTED CORRECTION DATES:

Waste analysis does not have quantities, pH, radioactivity,  
metals. No Part A permit filed with U.S. EPA.  
No copy of notice on site as required by 401 KAR 36:090.  
Sealed BCB. No determination of still existing material which  
once per year to determine if still maybe a generator.

INVESTIGATOR'S SIGNATURE [Signature] TITLE Env. Inspector Sr.  
I hereby acknowledge receipt of a copy of this report and further acknowledge that I have been advised of the discrepancies and alleged violations noted during the inspection.

OWNER'S or OPERATOR'S SIGNATURE [Signature] TITLE Engineer  
I do not necessarily agree with proceeding -



APPLICATION NUMBER \_\_\_\_\_

SUBMISSION DATE \_\_\_\_\_

PERMIT NUMBER \_\_\_\_\_

EXPIRATION DATE \_\_\_\_\_

## COMMONWEALTH OF KENTUCKY

DEPARTMENT FOR NATURAL RESOURCES  
AND ENVIRONMENTAL PROTECTIONDIVISION OF HAZARDOUS  
MATERIAL AND WASTE MANAGEMENTPERMIT APPLICATION  
FOR  
TRANSPORTING AND HANDLING  
OF  
HAZARDOUS WASTESGENERAL INFORMATION

Hazardous waste means any substance or combination of substances the disposition of which may create a threat to public health or to animal and aquatic life.

Three applications shall be submitted to the Department. The information requested on pages 1 and 2 shall be provided for each hazardous waste collected from each source.

If difficulty is encountered in providing the information requested in this application please call or write the Division of Hazardous Material and Waste Management, Department for Natural Resources and Environmental Protection, Frankfort, Kentucky, 40601.  
Phone: (502) 564-6716

APPLICANT INFORMATION

- A. Applicant's business name Ky. PETROLEUM PRODUCTS, Co.
- B. If applicant is a partnership, the name and address of each partner shall be listed on a separate sheet.
- C. Applicant's business address 4019 BLANTON LANE
- D. Applicant's business phone: area code 502 number 447-1802
- E. Name and phone number of an individual to be contacted should an emergency occur. LEO SHIRCLIFF - 502-447-1802
- F. To the best of my knowledge, the information contained in this application is true, correct, and complete.

Signature

Title

Date

Leo ShircliffOwner -6-22-77

## HAULER'S SURVEY FORM

I. Hauler:

Business Name: Kentucky Petroleum Products No. of Employees 2  
 Business Address: 4019 BLANTON LANE (City) LOUISVILLE (Zip) 40316  
 County: JEFFERSON (Business Phone) 502-447-1802 (Area Code) 502  
 Person Completing Form: LEO SHIRCLIFF Title: OWNER

II. Disposal and/or Processing Facilities used by Hauler:

A. Business Name: KY PETROLEUM PRODUCTS CO.  
 Business Address: 6911 GRADE LANE City LOU. State KY  
 County JEFFERSON Zip \_\_\_\_\_ Business Phone 447-1802 Area Code 40214

\_\_\_\_\_  
 Land Disposal  
 \_\_\_\_\_ Incinerator

\_\_\_\_\_  
 Liquid Waste Treatment  
 Other (Specify)  
WASTE OIL COLLECTION & RECYCLING

B. Business Name: \_\_\_\_\_  
 Business Address: \_\_\_\_\_ City \_\_\_\_\_ State \_\_\_\_\_  
 County \_\_\_\_\_ Zip \_\_\_\_\_ Business Phone \_\_\_\_\_ Area Code \_\_\_\_\_

\_\_\_\_\_  
 Land Disposal  
 \_\_\_\_\_ Incinerator

\_\_\_\_\_  
 Liquid Waste Treatment  
 Other (Specify)

C. List any additional disposal and/or facilities used by Hauler on back of this form.

III. Storage Facilities Owned or Used by Hauler:

A. Yes    No    Storage facilities used. (If yes, describe waste & type storage on back)  
 B. Maximum quantity stored at any time 120,000 gals.).  
 C. Frequency of transfer to storage area: Daily  
 D. Frequency of transfer from storage area: 3 or 4 days per week  
 E. Method of transfer from storage area: Tank Truck

IV. Additional Information:

A. Indicate number of customers served by Hauler of each item below:

\_\_\_\_ Residential 20-30 ☒ Industrial 100-150 ☒ Commercial \_\_\_\_\_ Governmental \_\_\_\_\_ Institutional

B. Indicate quantity collected for each type (tons/week):

\_\_\_\_ Residential 4000-6000 ☒ Industrial 10,000-15,000 ☒ Commercial \_\_\_\_\_ Governmental \_\_\_\_\_ Institutional

C. List below the areas (by city or county) served by Hauler:

all of Jefferson County

D. Indicate amount of equipment owned or used by Hauler:

\_\_\_\_ Packer Trucks  
1 Pick-Up Trucks  
2 Tank Trucks Stationary Compactors  
 Other (Specify)

\_\_\_\_ Non-Compactor Trucks  
 \_\_\_\_\_ Dumpster Boxes  
 \_\_\_\_\_ Open Top Boxes

REFERENCE # 7

APPLICATION NUMBER \_\_\_\_\_

SUBMISSION DATE \_\_\_\_\_

PERMIT NUMBER \_\_\_\_\_

EXPIRATION DATE \_\_\_\_\_

## COMMONWEALTH OF KENTUCKY

DEPARTMENT FOR NATURAL RESOURCES  
AND ENVIRONMENTAL PROTECTIONDIVISION OF HAZARDOUS  
MATERIAL AND WASTE MANAGEMENTPERMIT APPLICATION  
FOR  
TRANSPORTING AND HANDLING  
OF  
HAZARDOUS WASTESGENERAL INFORMATION

Hazardous waste means any substance or combination of substances the disposition of which may create a threat to public health or to animal and aquatic life.

Three applications shall be submitted to the Department. The information requested on pages 1 and 2 shall be provided for each hazardous waste collected from each source.

If difficulty is encountered in providing the information requested in this application please call or write the Division of Hazardous Material and Waste Management, Department for Natural Resources and Environmental Protection, Frankfort, Kentucky, 40601.  
Phone: (502) 564-6716

APPLICANT INFORMATION

- A. Applicant's business name KF. Petroleum Products Co
- B. If applicant is a partnership, the name and address of each partner shall be listed on a separate sheet.
- C. Applicant's business address 4019 Blanton Lane - Lou. Ky - 402
- D. Applicant's business phone: area code 502 number 447-1802
- E. Name and phone number of an individual to be contacted should an emergency occur. LEO SHIRCLIFF - 502-447-1802
- F. To the best of my knowledge, the information contained in this application is true, correct, and complete.

Signature

Title

Date

Leo ShircliffOwner11-20-77

## HAULER'S SURVEY FORM

Kentuckiana

## I. Hauler:

Business Name: Kentucky Petroleum Products No. of Employees 3  
 Business Address: 4019 Blanton Lane (City) Louisville (Zip) 40216  
 County: Jefferson (Business Phone) 502 - (Area Code) 447-1802  
 Person Completing Form: \_\_\_\_\_ Title: \_\_\_\_\_

## II. Disposal and/or Processing Facilities used by Hauler:

A. Business Name: Ky. Petroleum Products Co.  
 Business Address: 4019 Blanton Lane City Louisville State Ky.  
 County Jefferson Zip 40216 Business Phone 447-1802 Area Code 502

\_\_\_\_ Land Disposal  
 \_\_\_\_ Incinerator

\_\_\_\_ Liquid Waste Treatment  
 \_\_\_\_ Other (Specify) Resolox spraying.

B. Business Name: Mobil Waste Land Fill  
 Business Address: Butter Loop - City Lex. State Ky.  
 County Jefferson Zip \_\_\_\_\_ Business Phone 969-3393 Area Code 502

✓ Land Disposal  
 \_\_\_\_ Incinerator

\_\_\_\_ Liquid Waste Treatment  
 \_\_\_\_ Other (Specify) \_\_\_\_\_

C. List any additional disposal and/or facilities used by Hauler on back of this form.

## III. Storage Facilities Owned or Used by Hauler:

A. Yes ✓ No \_\_\_\_\_ Storage facilities used. (If yes, describe waste & type storage on back)  
 B. Maximum quantity stored at any time 120000 (tons or gals.).  
 C. Frequency of transfer to storage area: Daily  
 D. Frequency of transfer from storage area: Daily  
 E. Method of transfer from storage area: Tank truck

DEPARTMENT FOR NATURAL RESOURCE & ENVIRONMENTAL PROTECTION  
 DIVISION OF HAZARDOUS MATERIAL & WASTE MANAGEMENT

## IV. Additional Information:

A. Indicate number of customers served by Hauler of each item below:

\_\_\_\_ Residential Off. Industrial Off. Commercial 100 Governmental \_\_\_\_\_ Institutional \_\_\_\_\_

B. Indicate quantity collected for each type (tons/week):

\_\_\_\_ Residential Off. 2000,000 to 2500,000 Industrial 500,000 to 700,000 Commercial \_\_\_\_\_ Governmental \_\_\_\_\_ Institutional \_\_\_\_\_

C. List below the areas (by city or county) served by Hauler:

Jefferson County - Lexington Ky.  
Port of Hardin County  
Lexington Ky.

Jeffersonville, New Albany Ind.

D. Indicate amount of equipment owned or used by Hauler:

\_\_\_\_ Packer Trucks  
 \_\_\_\_ Pick-Up Trucks  
 \_\_\_\_ Stationary Compactors  
2 Tank Trucks Other (Specify) \_\_\_\_\_

\_\_\_\_ Non-Compacter Trucks  
 \_\_\_\_ Dumpster Boxes  
 \_\_\_\_ Open Top Boxes

CHARLOTTE E. BALDWIN  
SECRETARY



*Ken - please reply by mail*  
*ph*

MARTHA LAYNE COLLINS  
GOVERNOR

COMMONWEALTH OF KENTUCKY  
NATURAL RESOURCES AND ENVIRONMENTAL PROTECTION CABINET  
DEPARTMENT FOR ENVIRONMENTAL PROTECTION

FORT BOONE PLAZA  
18 REILLY ROAD  
FRANKFORT, KENTUCKY 40601

September 26, 1986

MEMORANDUM

TO: John Brooks, Area Supervisor  
Louisville Field Office

THRU: Carl Millanti, Acting Branch Manager *CM*  
Field Operations Branch

Caroline Patrick Haight, Manager *CPH*  
Permit Review Branch

FROM: Carol Glaser, Secretary *CG*  
Permit Review Branch

RE: Kentucky Petroleum Waste, Inc.  
4019 Blanton Lane  
Louisville, Ky. 40216  
EPA I.D. #KYD06-156-4001

OCT 2 17 00 PM '86  
RECEIVED  
JAN 22 1 13 PM '86  
RECEIVED  
DIVISION OF  
WASTE MANAGEMENT

Attached is a Notification from Kentucky Petroleum Waste stating they are a Transporter and TSD facility. Please make a determination based on your knowledge of the facility or by inspection whether they actually are a Transporter and TSD facility.

If you have any questions, please feel free to contact me.

JAD:cg

Attachment

United States Environmental Protection Agency  
Washington, DC 20460

Please refer to the instructions for  
filing Notification before completing  
this form. The information requested  
here is required by law (Section  
3010 of the Resource Conservation  
and Recovery Act)

Comments

Installation's EPA ID Number

**Approved**

Date Received  
 hr. mo. day

1. Name of Installation

### II Installation Mailing Address

Street or P.O. Box

City or Town

State

**ZIP Code**

### III. Location of Installation

**Street or Route Number**

City or Town

State

ZIP Code

#### IV. Installation Contact

Name and Title (last, first, and job title)

Phone Number (area code and number)

### V. Ownership

A. Name of Installation's Legal Owner

B. Type of Ownership (enter code)

VI. Type of Regulated Waste Activity (Mark "X" in the appropriate boxes. Refer to instructions.)

### A. Hazardous Waste Activity

### B. Used Oil Fuel Activities

- ☐ 6. Off-Specification Used Oil Fuel -  
(enter 'X' and mark appropriate boxes below)

- ☐ a. Generator Marketing to Burner  
☒ b. Other Marketer  
☐ c. Burner

☐ 7. Specification Used Oil Fuel Marketer (Or On-Site Burner) Who First Claims the Oil Meets the Specification.

VII. Waste Fuel Burning: Type of Combustion Device (enter "X" in all appropriate boxes to indicate type of combustion devices in which hazardous waste fuel or off-specification used oil fuel is burned. See instructions for definitions of combustion devices.)

☐ A. Utility Boiler      ☐ B. Industrial Boiler      ☐ C. Other

**A Utility Boiler**

**Q 8. Industrial Boiler**

☐ C. Industrial Furnace

VIII. Mode of Transportation (transporters only — enter "X" in the appropriate box(es))

☐ A. Air    ☐ B. Rail    ☒ C. Highway    ☐ D. Water    ☐ E. Other (specify)

### **IX. First or Subsequent Notification**

Mark 'X' in the appropriate box to indicate whether this is your installation's first notification of hazardous waste activity or a subsequent notification. If this is not your first notification, enter your installation's EPA ID Number in the space provided below.

☐ A. First Notification

☒ B. Subsequent Notification (complete item C)

**C. Installation's EPA ID Number**

C. Installation's EPA ID Number  
KY0061564001

ID - For Official Use Only											
C										T/A/C	
W										1	
<b>IX. Description of Hazardous Wastes (continued from front)</b>											
<b>A. Hazardous Wastes from Nonspecific Sources.</b> Enter the four-digit number from 40 CFR Part 261.31 for each listed hazardous waste from nonspecific sources your installation handles. Use additional sheets if necessary.											
1		2		3		4		5		RECEIVED JAN 21 1 25 PM '86 WASTE DIV OFFICE NOT RECEIVED	
7		8		9		10		11			
<b>B. Hazardous Wastes from Specific Sources.</b> Enter the four-digit number from 40 CFR Part 261.32 for each listed hazardous waste from specific sources your installation handles. Use additional sheets if necessary.											
13		14		15		16		17		RECEIVED JAN 29 1 24 PM '86 WASTE DIV OFFICE NOT RECEIVED	
19		20		21		22		23			
25		26		27		28		29			
30		31		32		33		34		RECEIVED JAN 29 1 24 PM '86 WASTE DIV OFFICE NOT RECEIVED	
37		38		39		40		41			
43		44		45		46		47			
48		49		50		51		52		53	
<b>C. Commercial Chemical Product Hazardous Wastes.</b> Enter the four-digit number from 40 CFR Part 261.33 for each chemical product hazardous waste your installation handles which may be a hazardous waste. Use additional sheets if necessary.											
31		32		33		34		35		RECEIVED JAN 29 1 24 PM '86 WASTE DIV OFFICE NOT RECEIVED	
37		38		39		40		41			
43		44		45		46		47			
48		49		50		51		52		53	
<b>D. Listed Infectious Wastes.</b> Enter the four-digit number from 40 CFR Part 261.34 for each hazardous waste from hospitals, veterinary hospitals, or medical and research laboratories your installation handles. Use additional sheets if necessary.											
48		49		50		51		52		53	
<b>E. Characteristics of Nonlisted Hazardous Wastes.</b> Mark "X" in the boxes corresponding to the characteristics of nonlisted hazardous wastes your installation handles. (See 40 CFR Parts 261.21 - 261.24)											
<input type="checkbox"/> 1. Ignitable (D001)		<input type="checkbox"/> 2. Corrosive (D002)		<input type="checkbox"/> 3. Reactive (D003)		<input checked="" type="checkbox"/> 4. Toxic (D004)					
<b>X. Certification</b>											
I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.											
Signature <i>James L. Shircliff</i>				Name and Official Title (type or print) JAMES SHIRCLIFF OWNER				Date Signed 1/29/86			

BILLING CODE 5540-60-C

\* THE ONLY THING I DEAL IN IS  
USED OILS.

JMS

**NATURAL RESOURCES AND ENVIRONMENTAL PROTECTION CABINET  
DIVISION OF WASTE MANAGEMENT**

**INTERIM STATUS HAZARDOUS WASTE FACILITY REPORT**

FACILITY NAME: KENTUCKY Petroleum EPA ID NUMBER: KYD06-156-4001 PAGE 1 OF 2  
 FACILITY CLASSIFICATION: H.W. Fuel Manager, off-spec. Use, Ltd. Petroleum  
 COUNTY: Jefferson DATE: 7/7/86 TIME: 2pm ROUTINE ☒ FOLLOW-UP ☐

INSPECTION ITEM	CITE*	C	NC	NA	COMMENTS
<b>I. REGISTRATION REQUIREMENTS</b>					
1. Operations consistent with registration	32:010 § 3		✓		
2. Hazardous waste determination	32:020 § 2		✓		
<b>II. GENERAL FACILITY REQUIREMENTS</b>					
1. General waste analysis	35:020 § 4		✓		
2. Security	35:020 § 5		✓		
3. General inspection requirements	35:020 § 6		✓		
4. Personnel training	35:020 § 7		✓		
<b>III. PREPAREDNESS AND PREVENTION</b>					
1. Maintenance & operation of required equipment	35:030 § 3, 4 & 5		✓		
2. Required aisle space	35:030 § 6	✓			
3. Local authority notification	35:030 § 7		✓		
4. Contingency plan:					
(a) Content	35:040 § 3 & 6		✓		
(b) Maintained at facility	35:040 § 4		✓		
(c) Distribution	35:040 § 4		✓		
(d) Implementation	35:040 § 2 & 7		✓		
<b>IV. PRETRANSPORT REQUIREMENTS</b>					
1. Packaging	32:030 § 1			✓	
2. Labeling	32:030 § 2			✓	
3. Marking	32:030 § 3			✓	
4. Waste accumulation:					
(a) 90-day accumulation	32:030 § 5	✓			
(b) Accumulation dated	32:030 § 5			✓	
(c) "Hazardous Waste" marking	32:030 § 5		✓		
<b>V. OPERATING RECORD/ MANIFEST</b>					
1. Generator manifest requirements:					
(a) Required information	32:020 § 2		✓		
(b) Proper execution	32:020 § 3 & 4		✓		
(c) Manifest maintained	32:040 § 1		✓		
(d) Exception report submitted & maintained	32:040 § 1 & 3		✓		
(e) International shipments	32:050 § 1		✓		
2. Generator annual report submitted & maintained	32:040 § 1 & 2			✓	

AUG 15 2 18 PM '86  
 WASTE MANAGEMENT

\*All regulatory cites are from Title 401 of the Kentucky Administrative Regulations. The number preceding the colon is the chapter reference. The number appearing after the colon is the regulation number. The symbol "§" is a reference to the section. For example, the reference to 32:010 § 3 should be read 401 KAR 32:010, Section 3.



# INTERIM STATUS FACILITY INSPECTION REPORT

FACILITY NAME: KENTUCKY Petroleum Products, Inc.

DATE: 7/7/86 PAGE 2 OF 2

INSPECTION ITEM	CITE*	C	NC	NA	COMMENTS
3. TSD manifest requirements:					
(a) TSD manifest execution	35:050 § 2		✓		
(b) Manifest discrepancies	35:050 § 3		✓		
(c) Unmanifested waste report	35:050 § 7		✓		
(d) Foreign source notification	35:020 § 3		✓		
4. Operating records:					
(a) Incoming waste records	35:050 § 4		✓		
(b) Waste location records	35:050 § 4		✓		
(c) Waste analysis records	35:050 § 4		✓		
(d) Contingency plan implementation report	35:050 § 4		✓		
(e) Inspection records	35:050 § 4		✓		
(f) Groundwater monitoring records	35:050 § 4		✓		
(g) Closure plan & cost estimate records	35:050 § 4		✓		
5. TSD annual report submitted & maintained	35:050 § 6		✓		

\*All regulatory cites are from Title 401 of the Kentucky Administrative Regulations. The number preceding the colon is the chapter reference. The number appearing after the colon is the regulation number. The symbol "§" is a reference to the section. For example, the reference to 32:010 § 3 should be read 401 KAR 32:010, Section 3.

VI. ATTACHMENTS: Container Facility Report ☐ Tank Facility Report ☐ Surface Impoundment Report ☐  
Waste Pile Report ☐ Land Treatment Facility Report ☐ Landfill Report ☐ Incinerator Report ☐  
Thermal Treatment Facility Report ☐ UIC Well Report ☐ Chemical, Physical & Biological Treatment Facility Report ☐

## VII. GENERAL INFORMATION:

1. Photographs taken?
2. Samples collected?
3. Previous non-compliances corrected?

☐ YES ☒ NO ☐ N/A  
☐ YES ☒ NO ☐ N/A  
☐ YES ☒ NO ☐ N/A

## VIII. COMMENTS INCLUDING REMEDIAL MEASURES AND EXPECTED CORRECTION DATES:

*Waste analysis does not show any hazardous materials, only non-hazardous.  
I met with EPA permit file with 401 KAR 36:090.  
No copy of notice on site as required by 401 KAR 36:090.  
Section 36:090. No determination of whether material is hazardous or not.  
A. Once per year to determine whether material is hazardous or not.*

INVESTIGATOR'S SIGNATURE [Signature]

TITLE Env. Inspector Sr.

I hereby acknowledge receipt of a copy of this report and further acknowledge that I have been advised of the discrepancies and alleged violations noted during the inspection.

OWNER'S or OPERATOR'S SIGNATURE [Signature]

TITLE Engineer

*I do not wish to agree with preceding -*

DIVISION OF WASTE MANAGEMENT  
CERTIFICATE OF REGISTRATION

Kentucky Petroleum Waste, Inc.  
4019 Blanton Lane  
Louisville, Ky. 40216

The Division of Waste Management hereby issues the above-named installation a Certificate of Registration for the hazardous waste activity specified below. This Certificate is issued pursuant to KRS 224 and regulations issued pursuant thereto. This registration does not confer an unqualified right, but is subject to all applicable waste management provisions of KRS Chapter 224 and regulations promulgated pursuant thereto. Conformance with all such laws and regulations is the responsibility of the registrant. All rights of inspection by Division of Waste Management representatives are reserved.

Receipt of the registration fee specified below is hereby acknowledged.

COUNTY: Jefferson

REGISTRATION NUMBER: KYD06-156-4001

LEGAL STRUCTURE: Corporation

EFFECTIVE DATE: January 29, 1986

REGISTRATION FEE: N/A  
*check TSD + Transport*

EXPIRATION DATE: N/A

ACTIVITY: Hazardous Waste Fuel Marketer  
Off Specification Used Oil  
Fuel Marketer

DATE OF ISSUE: May 9, 1986

*J. Alby Baker*  
DIRECTOR, DIVISION OF WASTE MANAGEMENT

RECEIVED

**Continued on page 10**

ID - For Official Use Only											
C											T/A/C
W											1

**IX. Description of Hazardous Wastes (continued from front)**

**A. Hazardous Wastes from Nonspecific Sources.** Enter the four-digit number from 40 CFR Part 261.31 for each listed hazardous waste from nonspecific sources your installation handles. Use additional sheets if necessary.

1	2	3	4	5	6
7	8	9	10	11	12

**B. Hazardous Wastes from Specific Sources.** Enter the four-digit number from 40 CFR Part 261.32 for each listed hazardous waste from specific sources your installation handles. Use additional sheets if necessary.

13	14	15	16	17	18
19	20	21	22	23	24
25	26	27	28	29	30

**C. Commercial Chemical Product Hazardous Wastes.** Enter the four-digit number from 40 CFR Part 261.33 for each chemical product your installation handles which may be a hazardous waste. Use additional sheets if necessary.

31	32	33	34	35
37	38	39	40	41
43	44	45	46	47

**D. Listed Infectious Wastes.** Enter the four-digit number from 40 CFR Part 261.34 for each hazardous waste from hospitals, veterinary hospitals, or medical and research laboratories your installation handles. Use additional sheets if necessary.

49	50	51	52	53	54

**E. Characteristics of Nonlisted Hazardous Wastes.** Mark 'X' in the boxes corresponding to the characteristics of nonlisted hazardous wastes your installation handles. (See 40 CFR Parts 261.21 - 261.24)

☐ 1. Ignitable  
(D001)

☐ 2. Corrosive  
(D002)

☐ 3. Reactive  
(D003)

☒ 4. Toxic  
(D000)
**X. Certification**

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

Signature

Name and Official Title (type or print)

Date Signed

James L. Shircliff

JAMES SHIRCLIFF OWNER

1/29/86

EPA Form 8700-12 (Rev. 11-85) Reverse

BILLING CODE 5540-50-C

\* THE ONLY THING I DEAL IN IS  
USED OILS.



Kentucky Natural Resources and Environmental Protection Cabinet  
Department for Environmental Protection  
Division of Waste Management

CERTIFICATE OF REGISTRATION  
FOR HAZARDOUS WASTE MANAGEMENT ACTIVITY

INSTALLATION NAME: Kentucky Petroleum Waste, Inc.  
MAILING ADDRESS: 6911 Grade Lane, Louisville, Kentucky 40213  
LOCATION: 6911 Grade Lane, Louisville, Kentucky 40213  
CONTACT PERSON: Beverly Coffman

☐ NEW☐ AMENDED/MODIFIED☒ RENEWAL☐ REISSUED

The Division of Waste Management hereby issues the above-named installation a Certificate of Registration for the hazardous waste activity specified below. This Certificate is issued under the provisions of KRS Chapter 224 and regulations promulgated pursuant thereto. Conformance with all applicable laws and regulations is the responsibility of the registrant. All rights of inspection by representatives of the Division of Waste Management are reserved. Receipt of the registration fee specified below is hereby acknowledged.

This Certificate supercedes all previous Certificates of Registration.

COUNTY/STATE: Jefferson/KY

REGISTRATION NUMBER: KYD-061-564-001

LEGAL STRUCTURE: P

EXPIRATION DATE: January 31, 1991

REGISTRATION FEE: \$600.00

ACTIVITY: Other Off-Spec. Used Oil Fuel Marketer  
Off-Spec. Used Oil Fuel Burner  
Spec. Used Oil Fuel Marketer

WASTESTREAMS: N/A

Issued and effective this 19th day of January 1990

Susan C. Bush, Director

Arthur L. Williams, Commissioner



Kentucky Natural Resources and Environmental Protection Cabinet  
Department for Environmental Protection - Division of Waste Management

# Annual Registration of Hazardous Waste Activity

18 Reilly Road - Frankfort, Kentucky  
(502) 564-6716

DEC 8 8 12 AM '89

See attached INSTRUCTIONS to complete this form.

☐ FEE SUBMITTED: \$ 600.00

FOR OFFICIAL USE ONLY: Receipt No. 010119 Date: 1/15/90

DO NOT WRITE IN THIS SPACE

## I. GENERAL INFORMATION

KENTUCKY PETROLEUM WASTE, INC.  
KY0061564001 00  
SHIRCLIFF CHARLES R Coffman Beverly  
6911 GRADE LANE  
LOUISVILLE KY 40213

KENTUCKY PETROLEUM WASTE, INC.  
KY0061564001 00  
5023677766  
6911 GRADE LANE  
LOUISVILLE 40213

## A. CORRECTIONS TO FIRST LABEL:

EPA ID Number: SAME

Contact Person: Coffman Beverly

Mailing Address: SAME

## B. CORRECTIONS TO SECOND LABEL:

EPA ID Number: \_\_\_\_\_

Name: \_\_\_\_\_

Location: \_\_\_\_\_

Phone Number: \_\_\_\_\_

C. County: Jefferson Important see INSTRUCTIONS: Latitude: 38° 08' 58" Longitude: 85° 44' 08"

D. Name of Installation's Legal Owner: Kentucky Petroleum Waste Inc.

E. Type of Ownership Code: P (see INSTRUCTIONS for the correct codes)

## II. TYPE OF REGULATED ACTIVITY

Enter an "X" in every applicable box.

- ☒ 1a. Full Quantity Generator (over 2200 pounds/month or over 1000 kg/month)  
☐ 1b. Small Quantity Generator (between 220 and 2200 pounds/month or between 100 and 1000 kg/month)  
☐ 1c. Limited Quantity Generator (under 220 pounds/month or under 100 kg/month every month)

Identify the type of on-site accumulation: ☐ Containers ☐ Tank(s) ☐ Containers & Tank(s)

Complete this section only if you transport your own waste.

☐ 2. Transporter: ☐ Air ☐ Rail ☐ Highway ☐ Water ☐ Other: \_\_\_\_\_

☒ 3a. Treatment / Storage / Disposal Facility

☐ 3b. Underground Injection Well

☐ 4a. Generator Marketing Hazardous Waste Fuel to a Burner (see 401 KAR 36:040)

☐ 4b. Other Hazardous Waste Fuel Marketer

☐ 4c. Hazardous Waste Fuel Burner: ☐ Utility Boiler ☐ Industrial Boiler ☐ Industrial Furnace

Source of Waste Fuel Being Burned: ☐ Generated On-Site Exclusively ☐ Received From Off-Site

☐ 5a. Generator Marketing Off-Specification Used Oil Fuel to a Burner (see 401 KAR 36:050)

☒ 5b. Other Off-Specification Used Oil Fuel Marketer

☒ 5c. Off-Specification Used Oil Fuel Burner: ☐ Utility Boiler ☒ Industrial Boiler ☐ Industrial Furnace

Source of Used Oil Being Burned: ☐ Generated On-Site Exclusively ☐ Received From Off-Site

☒ 5d. Specification Used Oil Fuel Marketer (or On-site Burner) Who First Claims the Oil Meets Specification

☐ 6. Lead Acid Battery Recycler (see 401 KAR 36:030)


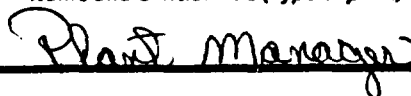
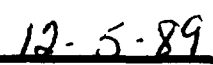
☐ 7. Precious Metals Recycler (i.e., Silver Recovery - see 401 KAR 36:060)

☐ 8. Other Recycler (401 KAR 31:010, Section 6 - specify) \_\_\_\_\_

## III. SOURCE OF ANY WASTE BEING MANAGED AT THIS LOCATION: Refer to INSTRUCTIONS.

☐ Generated On-Site Exclusively ☒ Received from Off-Site

Is this site a commercial facility? ☒ Yes ☐ No

IV. DESCRIPTION OF HAZARDOUS WASTES				EPA ID Number: <span style="border: 1px solid black; display: inline-block; width: 100px; height: 1.2em; vertical-align: middle;"></span>							
A. Description of Waste <small>(List all current wastestreams)</small>	B. EPA Waste Numbers	C. Physical State	D. Maximum Amount of Waste in Calendar Month	E. Estimated Annual Quantity of Waste	F. Unit						
G. TOTALS →											
V. COMMENTS											
<b>VI. CERTIFICATION</b> - I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.											
Signature		Name and Official Title (Type or print)		Date Signed							
											

**NUS CORPORATION AND SUBSIDIARIE.**

REFERENCE # 11

**TELECON NOTE****CONTROL NO.****DATE:** December 17, 1990**TIME:** 1650**DISTRIBUTION:**

Kentucky Petroleum Products  
(Kentucky Petroleum Waste, Inc.)  
Louisville, Kentucky

**BETWEEN:** Christie Harrington**OF:** RCRA Hazardous Waste  
Permitting**PHONE:** 502-564-6716**AND:** Wendell C. McLendon, NUS Corporation**DISCUSSION:**

Kentucky Petroleum Waste is permitted as a marketer of off-spec oil and spec oil and as a burner of off-spec oil. They are not a generator or a TSD facility. They do not have an active enforcement case at this time.



ROBER  
Sec

REFERENCE # 12



JULIAN M. CARROLL  
GOVERNOR

COMMONWEALTH OF KENTUCKY  
DEPARTMENT FOR NATURAL RESOURCES AND ENVIRONMENTAL PROTECTION  
BUREAU OF ENVIRONMENTAL PROTECTION  
JOHN A. ROTH  
COMMISSIONER  
FRANKFORT, KENTUCKY 40601  
March 22, 1978

Mr. Leo Shircliffe  
Kentucky Petroleum Products  
4019 Blanton Lane  
Louisville, Kentucky

Dear Mr. Shircliffe:

On Thursday, March 9, 1978, Steve Shannon witnessed the unauthorized deposition of approximately one thousand gallons of waste oil into the working face of Mobile Waste landfill site - by a tank-truck drive from Kentucky Petroleum Products Company. Kentucky Administrative Regulations - governing the disposal of waste - prohibit the discharge of liquids into a landfill without special permission (KAR 2:010; Section 11 (4)).

There are no special permissions issued by this department for the disposal of waste oil in this manner. Waste Oil may be recovered or incinerated. It is useful in road oiling as a dust control measure during dry weather. But disposal in the manner Mr. Shannon and I observed is unlawful, un-necessary, and if the practice is continued may subject your company to economic penalties of \$1,000.00 or more.

If you are not aware of the legal alternatives in waste oil, I will be glad to discuss them with you and provide the information, both technical and with respect to local oil disposal operations, that is available to this office.

Please feel free to contact me at (502) 564-6716.

Sincerely,

*Robert L. Sholar*

Robert L. Sholar  
Environmental Specialist I  
Hazardous Material Management Section  
Division of Hazardous Materials and  
Waste Management

RS:cjg

CHARLC  
SECRETARYMARTHA LAYNE COLLINS  
GOVERNORCOMMONWEALTH OF KENTUCKY  
NATURAL RESOURCES AND ENVIRONMENTAL PROTECTION CABINET  
DEPARTMENT FOR ENVIRONMENTAL PROTECTIONFORT BOONE PLAZA  
18 REILLY ROAD  
FRANKFORT, KENTUCKY 40601Report No: B02-681  
SA No: 84-541TO: Division of Waste Management  
#18 Reilly Road, Fort Boone Plaza  
Frankfort, Kentucky 40601Re: Kentucky Petroleum  
Waste, Inc.  
Louisville, Ky.

ATTN: Carl Horneman

FROM: William E. Davis, Director *SB for WED*  
Environmental Services

DATE: March 13, 1984

Sample Collector: Mildred Archer Date: 02/29/84 Time: 1110

Sample Identification: Waste Oil Tank # 6

REPORT OF ANALYSIS

Date: Received: 02/29/84 Started: 02/29/84 Finished: 03/08/84

ts:

<u>METER</u>	<u>CONCENTRATION (mg/kg)</u>
Hexachlorobenzene	<1.0
Hexachlorocyclohexane, alpha isomer	<1.0
Hexachlorocyclohexane, gamma isomer	<1.0
Heptachlor	<1.0
Aldrin	<1.0
Heptachlor Epoxide	<1.0
t-Chlordane	<1.0
c-Chlordane	<1.0
O,P'-DDE	<1.0
P,P'-DDE	<1.0
Dieldrin	<1.0
Endrin	<1.0
O,P'-DDD	<1.0
P,P'-DDD	<1.0

O,P'-DDT	<1.0
P,P'-DDT	<1.0
Total DDT	<1.0
Methoxychlor	<1.0
Mirex	<1.0
Endosulfan I	<1.0
Endosulfan II	<1.0
Endosulfan Sulfate	<1.0
Endrin Aldehyde	<1.0
Endrin Ketone	<1.0
Toxaphene	<1.0
Technical Chlordane	<1.0
Aroclor 1016	<1.0
Aroclor 1221	<1.0
Aroclor 1232	<1.0
Aroclor 1242	<1.0
Aroclor 1248	<1.0
Aroclor 1254	<1.0
Aroclor 1260	<1.0
Aroclor 1262	<1.0
Aroclor 1268	<1.0
Methylene Chloride	<1.
1,2-Dichloroethene	<1.
Chloroform	<1.
1,2-Dichloroethane	<1.
1,1,1-Trichloroethane	56.
Carbon Tetrachloroide	<1.
Bromodichloromethane	<1.
Trichloroethene	1,600.
1,2-Dichloropropane	<1.
Dibromochloromethane	<1.
Chloroethyvinyl ether	<1.
Bromoform	<1.
Tetrachloroethene	80.
Chlorobenzene	<1.

CHARLOTTE E. BALDWIN  
SECRETARY



MARTHA LAYNE COLLINS  
GOVERNOR

COMMONWEALTH OF KENTUCKY  
**NATURAL RESOURCES AND ENVIRONMENTAL PROTECTION CABINET**  
DEPARTMENT FOR ENVIRONMENTAL PROTECTION

FORT BOONE PLAZA  
18 REILLY ROAD  
FRANKFORT, KENTUCKY 40601

Report No: B02-682  
SA No: 84-542

TO: Division of Waste Management  
#18 Reilly Road, Fort Boone Plaza  
Frankfort, Kentucky 40601

Re: Kentucky Petroleum  
Waste, Inc.  
Louisville, Ky.

ATTN: Carl Horneman

FROM: William E. Davis, Director *WED*  
Environmental Services

DATE: March 13, 1984

Sample Collector: Mildred Archer Date: 02/29/84 Time: 1115

Sample Identification: Waste Oil Tank # 7

REPORT OF ANALYSIS

Date: Received: 02/29/84 Started: 02/29/84 Finished: 03/08/84

Results:

<u>PARAMETER</u>	<u>CONCENTRATION (mg/kg)</u>
Hexachlorobenzene	<1.0
Hexachlorocyclohexane, alpha isomer	<1.0
Hexachlorocyclohexane, gamma isomer	<1.0
Heptachlor	<1.0
Aldrin	<1.0
Heptachlor Epoxide	<1.0
t-Chlordane	<1.0
c-Chlordane	<1.0
O,P'-DDE	<1.0
P,P'-DDE	<1.0
Dieldrin	<1.0
Endrin	<1.0
O,P'-DDD	<1.0
P,P'-DDD	<1.0

O,P'-DDT	<1.0
P,P'-DDT	<1.0
Total DDT	<1.0
Methoxychlor	<1.0
Mirex	<1.0
Endosulfan I	<1.0
Endosulfan II	<1.0
Endosulfan Sulfate	<1.0
Endrin Aldehyde	<1.0
Endrin Ketone	<1.0
Toxaphene	<1.0
Technical Chlordane	<1.0
Aroclor 1016	<1.0
Aroclor 1221	<1.0
Aroclor 1232	<1.0
Aroclor 1242	<1.0
Aroclor 1248	<1.0
Aroclor 1254	<1.0
Aroclor 1260	<1.0
Aroclor 1262	<1.0
Aroclor 1268	<1.0
Methylene Chloride	<1.
1,2-Dichloroethene	<1.
Chloroform	<1.
1,2-Dichloroethane	<1.
1,1,1-Trichloroethane	18.
Carbon Tetrachloroide	<1.
Bromodichloromethane	<1.
Trichloroethene	26.
1,2-Dichloropropane	<1.
Dibromochloromethane	<1.
Chloroethyvinyl ether	<1.
Bromoform	<1.
Tetrachloroethene	21.
Chlorobenzene	<1.

CHARLOTTE E. BALDWIN  
SECRETARY



MARTHA LAYNE COLLINS  
GOVERNOR

COMMONWEALTH OF KENTUCKY  
**NATURAL RESOURCES AND ENVIRONMENTAL PROTECTION CABINET**  
DEPARTMENT FOR ENVIRONMENTAL PROTECTION

FORT BOONE PLAZA  
18 REILLY ROAD  
FRANKFORT, KENTUCKY 40601

Report No: B02-683  
SA No: 84-543

TO: Division of Waste Management  
#18 Reilly Road, Fort Boone Plaza  
Frankfort, Kentucky 40601

Re: Kentucky Petroleum  
Waste, Inc.  
Louisville, Ky.

ATTN: Carl Horneman

FROM: William E. Davis, Director *so for WED*  
Environmental Services

DATE: March 13, 1984

Sample Collector: Mildred Archer Date: 02/29/84 Time: 1120

Sample Identification: Waste Oil Tank # 8

REPORT OF ANALYSIS

Date: Received: 02/29/84 Started: 02/29/84 Finished: 03/08/84

Results:

<u>PARAMETER</u>	<u>CONCENTRATION (mg/kg)</u>
Hexachlorobenzene	<1.0
Hexachlorocyclohexane, alpha isomer	<1.0
Hexachlorocyclohexane, gamma isomer	<1.0
Heptachlor	<1.0
Aldrin	<1.0
Heptachlor Epoxide	<1.0
t-Chlordane	<1.0
c-Chlordane	<1.0
O,P'-DDE	<1.0
P,P'-DDE	<1.0
Dieldrin	<1.0
Endrin	<1.0
O,P'-DDD	<1.0
P,P'-DDD	<1.0

O,P'-DDT	<1.0
P,P'-DDT	<1.0
Total DDT	<1.0
Methoxychlor	<1.0
Mirex	<1.0
Endosulfan I	<1.0
Endosulfan II	<1.0
Endosulfan Sulfate	<1.0
Endrin Aldehyde	<1.0
Endrin Ketone	<1.0
Toxaphene	<1.0
Technical Chlordane	<1.0
Aroclor 1016	<1.0
Aroclor 1221	<1.0
Aroclor 1232	<1.0
Aroclor 1242	<1.0
Aroclor 1248	<1.0
Aroclor 1254	<1.0
Aroclor 1260	<1.0
Aroclor 1262	<1.0
Aroclor 1268	<1.0
Methylene Chloride	<1.
1,2-Dichloroethene	<1.
Chloroform	<1.
1,2-Dichloroethane	<1.
1,1,1-Trichloroethane	190.
Carbon Tetrachloroide	<1.
Bromodichloromethane	<1.
Trichloroethene	10.
1,2-Dichloropropane	<1.
Dibromochloromethane	<1.
Chloroethyvinyl ether	<1.
Bromoform	<1.
Tetrachloroethene	42.
Chlorobenzene	<1.

CHARLOTTE E. BALDWIN  
SECRETARY



MARTHA LAYNE COLLINS  
GOVERNOR

COMMONWEALTH OF KENTUCKY  
**NATURAL RESOURCES AND ENVIRONMENTAL PROTECTION CABINET**  
DEPARTMENT FOR ENVIRONMENTAL PROTECTION

FORT BOONE PLAZA  
18 REILLY ROAD  
FRANKFORT, KENTUCKY 40601

Report No: B02-684  
SA No: 84-544

TO: Division of Waste Management  
#18 Reilly Road, Fort Boone Plaza  
Frankfort, Kentucky 40601

Re: Kentucky Petroleum  
Waste, Inc.  
Louisville, Ky.

ATTN: Carl Horneman

FROM: William E. Davis, Director *WED*  
Environmental Services

DATE: March 13, 1984

Sample Collector: Mildred Archer Date: 02/29/84 Time: 1125

Sample Identification: Waste Oil Tank # 9

REPORT OF ANALYSIS

Date: Received: 02/29/84 Started: 02/29/84 Finished: 03/08/84

Results:

<u>PARAMETER</u>	<u>CONCENTRATION (mg/kg)</u>
Hexachlorobenzene	<1.0
Hexachlorocyclohexane, alpha isomer	<1.0
Hexachlorocyclohexane, gamma isomer	<1.0
Heptachlor	<1.0
Aldrin	<1.0
Heptachlor Epoxide	<1.0
t-Chlordane	<1.0
c-Chlordane	<1.0
O,P'-DDE	<1.0
P,P'-DDE	<1.0
Dieldrin	<1.0
Endrin	<1.0
O,P'-DDD	<1.0
P,P'-DDD	<1.0



O,P'-DDT	<1.0
P,P'-DDT	<1.0
Total DDT	<1.0
Methoxychlor	<1.0
Mirex	<1.0
Endosulfan I	<1.0
Endosulfan II	<1.0
Endosulfan Sulfate	<1.0
Endrin Aldehyde	<1.0
Endrin Ketone	<1.0
Toxaphene	<1.0
Technical Chlordane	<1.0
Aroclor 1016	<1.0
Aroclor 1221	<1.0
Aroclor 1232	<1.0
Aroclor 1242	<1.0
Aroclor 1248	<1.0
Aroclor 1254	<1.0
Aroclor 1260	<1.0
Aroclor 1262	<1.0
Aroclor 1268	<1.0
Methylene Chloride	<1.
1,2-Dichloroethene	<1.
Chloroform	<1.
1,2-Dichloroethane	<1.
1,1,1-Trichloroethane	190.
Carbon Tetrachloroide	<1.
Bromodichloromethane	<1.
Trichloroethene	5.
1,2-Dichloropropane	<1.
Dibromochloromethane	<1.
Chloroethyvinyl ether	<1.
Bromoform	<1.
Tetrachloroethene	22.
Chlorobenzene	<1.

CHARLOTTE E. BALDWIN  
SECRETARY



MARTHA LAYNE COLLINS  
GOVERNOR

COMMONWEALTH OF KENTUCKY  
NATURAL RESOURCES AND ENVIRONMENTAL PROTECTION CABINET  
DEPARTMENT FOR ENVIRONMENTAL PROTECTION

FORT BOONE PLAZA  
18 REILLY ROAD  
FRANKFORT, KENTUCKY 40601

Report No: B02-685  
SA No: 84-545

TO: Division of Waste Management  
#18 Reilly Road, Fort Boone Plaza  
Frankfort, Kentucky 40601

Re: Kentucky Petroleum  
Waste, Inc.  
Louisville, Ky.

ATTN: Carl Horneman

FROM: William E. Davis, Director *so for WED*  
Environmental Services

DATE: March 13, 1984

Sample Collector: Mildred Archer Date: 02/29/84 Time: 1130

Sample Identification: Waste Oil Tank # 10

REPORT OF ANALYSIS

Date: Received: 02/29/84 Started: 02/29/84 Finished: 03/08/84

Results:

<u>PARAMETER</u>	<u>CONCENTRATION (mg/kg)</u>
Hexachlorobenzene	<1.0
Hexachlorocyclohexane, alpha isomer	<1.0
Hexachlorocyclohexane, gamma isomer	<1.0
Heptachlor	<1.0
Aldrin	<1.0
Heptachlor Epoxide	<1.0
t-Chlordane	<1.0
c-Chlordane	<1.0
O,P'-DDE	<1.0
P,P'-DDE	<1.0
Dieldrin	<1.0
Endrin	<1.0
O,P'-DDD	<1.0
P,P'-DDD	<1.0

O,P'-DDT	<1.0
P,P'-DDT	<1.0
Total DDT	<1.0
Methoxychlor	<1.0
Mirex	<1.0
Endosulfan I	<1.0
Endosulfan II	<1.0
Endosulfan Sulfate	<1.0
Endrin Aldehyde	<1.0
Endrin Ketone	<1.0
Toxaphene	<1.0
Technical Chlordane	<1.0
Aroclor 1016	<1.0
Aroclor 1221	<1.0
Aroclor 1232	<1.0
Aroclor 1242	<1.0
Aroclor 1248	<1.0
Aroclor 1254	<1.0
Aroclor 1260	<1.0
Aroclor 1262	<1.0
Aroclor 1268	<1.0
Methylene Chloride	<1.
1,2-Dichloroethene	<1.
Chloroform	<1.
1,2-Dichloroethane	<1.
1,1,1-Trichloroethane	230.
Carbon Tetrachloroide	<1.
Bromodichloromethane	<1.
Trichloroethene	22.
1,2-Dichloropropane	<1.
Dibromochloromethane	<1.
Chloroethyvinyl ether	<1.
Bromoform	<1.
Tetrachloroethene	2000.
Chlorobenzene	<1.

CHARLOTTE E. BALDWIN  
SECRETARY



MARTHA LAYNE COLLINS  
GOVERNOR

COMMONWEALTH OF KENTUCKY  
NATURAL RESOURCES AND ENVIRONMENTAL PROTECTION CABINET  
DEPARTMENT FOR ENVIRONMENTAL PROTECTION

FORT BOONE PLAZA  
18 REILLY ROAD  
FRANKFORT, KENTUCKY 40601

Report No: B02-686  
SA No: 84-546

TO: Division of Waste Management  
#18 Reilly Road, Fort Boone Plaza  
Frankfort, Kentucky 40601

Re: Kentucky Petroleum  
Waste, Inc.  
Louisville, Ky.

ATTN: Carl Horneman

FROM: William E. Davis, Director *SB for WED*  
Environmental Services

DATE: March 13, 1984

Sample Collector: Mildred Archer Date: 02/29/84 Time: 1135

Sample Identification: Waste Oil Tank # 11

REPORT OF ANALYSIS

Date: Received: 02/29/84 Started: 02/29/84 Finished: 03/08/84

Results:

<u>PARAMETER</u>	<u>CONCENTRATION (mg/kg)</u>
Hexachlorobenzene	<1.0
Hexachlorocyclohexane, alpha isomer	<1.0
Hexachlorocyclohexane, gamma isomer	<1.0
Heptachlor	<1.0
Aldrin	<1.0
Heptachlor Epoxide	<1.0
t-Chlordane	<1.0
c-Chlordane	<1.0
O,P'-DDE	<1.0
P,P'-DDE	<1.0
Dieldrin	<1.0
Endrin	<1.0
O,P'-DDD	<1.0
P,P'-DDD	<1.0

O,P'-DDT	<1.0
P,P'-DDT	<1.0
Total DDT	<1.0
Methoxychlor	<1.0
Mirex	<1.0
Endosulfan I	<1.0
Endosulfan II	<1.0
Endosulfan Sulfate	<1.0
Endrin Aldehyde	<1.0
Endrin Ketone	<1.0
Toxaphene	<1.0
Technical Chlordane	<1.0
Aroclor 1016	<1.0
Aroclor 1221	<1.0
Aroclor 1232	<1.0
Aroclor 1242	<1.0
Aroclor 1248	<1.0
Aroclor 1254	<1.0
Aroclor 1260	<1.0
Aroclor 1262	<1.0
Aroclor 1268	<1.0
Methylene Chloride	<1.
1,2-Dichloroethene	<1.
Chloroform	<1.
1,2-Dichloroethane	<1.
1,1,1-Trichloroethane	480.
Carbon Tetrachloroide	<1.
Bromodichloromethane	<1.
Trichloroethene	21.
1,2-Dichloropropane	<1.
Dibromochloromethane	<1.
Chloroethyvinyl ether	<1.
Bromoform	<1.
Tetrachloroethene	4700.
Chlorobenzene	<1.

CHARLOTTE E. BALDWIN  
SECRETARY



MARTHA LAYNE COLLINS  
GOVERNOR

COMMONWEALTH OF KENTUCKY  
NATURAL RESOURCES AND ENVIRONMENTAL PROTECTION CABINET  
DEPARTMENT FOR ENVIRONMENTAL PROTECTION

FORT BOONE PLAZA  
18 REILLY ROAD  
FRANKFORT, KENTUCKY 40601

Report No: B02-687  
SA No: 84-547

TO: Division of Waste Management  
#18 Reilly Road, Fort Boone Plaza  
Frankfort, Kentucky 40601

Re: Kentucky Petroleum  
Waste, Inc.  
Louisville, Ky.

ATTN: Carl Horneman

FROM: William E. Davis, Director *WED*  
Environmental Services

DATE: March 13, 1984

Sample Collector: Mildred Archer Date: 02/29/84 Time: 1140

Sample Identification: Waste Oil Tank # 12

REPORT OF ANALYSIS

Date: Received: 02/29/84 Started: 02/29/84 Finished: 03/08/84

Results:

<u>PARAMETER</u>	<u>CONCENTRATION (mg/kg)</u>
Hexachlorobenzene	<1.0
Hexachlorocyclohexane, alpha isomer	<1.0
Hexachlorocyclohexane, gamma isomer	<1.0
Heptachlor	<1.0
Aldrin	<1.0
Heptachlor Epoxide	<1.0
t-Chlordane	<1.0
c-Chlordane	<1.0
O,P'-DDE	<1.0
P,P'-DDE	<1.0
Dieldrin	<1.0
Endrin	<1.0
O,P'-DDD	<1.0
P,P'-DDD	<1.0

O,P'-DDT	<1.0
P,P'-DDT	<1.0
Total DDT	<1.0
Methoxychlor	<1.0
Mirex	<1.0
Endosulfan I	<1.0
Endosulfan II	<1.0
Endosulfan Sulfate	<1.0
Endrin Aldehyde	<1.0
Endrin Ketone	<1.0
Toxaphene	<1.0
Technical Chlordane	<1.0
Aroclor 1016	<1.0
Aroclor 1221	<1.0
Aroclor 1232	<1.0
Aroclor 1242	<1.0
Aroclor 1248	<1.0
Aroclor 1254	<1.0
Aroclor 1260	<1.0
Aroclor 1262	<1.0
Aroclor 1268	<1.0
Methylene Chloride	<1.
1,2-Dichloroethene	<1.
Chloroform	<1.
1,2-Dichloroethane	<1.
1,1,1-Trichloroethane	85.
Carbon Tetrachloroide	<1.
Bromodichloromethane	<1.
Trichloroethene	4.
1,2-Dichloropropane	<1.
Dibromochloromethane	<1.
Chloroethyvinyl ether	<1.
Bromoform	<1.
Tetrachloroethene	94.
Chlorobenzene	<1.

CHARLOTTE E. BALDWIN  
SECRETARY



MARTHA LAYNE COLLINS  
GOVERNOR

COMMONWEALTH OF KENTUCKY  
NATURAL RESOURCES AND ENVIRONMENTAL PROTECTION CABINET  
DEPARTMENT FOR ENVIRONMENTAL PROTECTION

FORT BOONE PLAZA  
18 REILLY ROAD  
FRANKFORT, KENTUCKY 40601

Report No: B02-688  
SA No: 84-548

TO: Division of Waste Management  
#18 Reilly Road, Fort Boone Plaza  
Frankfort, Kentucky 40601

Re: Kentucky Petroleum  
Waste, Inc.  
Louisville, Ky.

ATTN: Carl Horneman

FROM: William E. Davis, Director *WED*  
Environmental Services

DATE: March 13, 1984

Sample Collector: Mildred Archer Date: 02/29/84 Time: 1145

Sample Identification: Waste Oil Tank # 13

REPORT OF ANALYSIS

Date: Received: 02/29/84 Started: 02/29/84 Finished: 03/08/84

Results:

<u>PARAMETER</u>	<u>CONCENTRATION (mg/kg)</u>
Hexachlorobenzene	<1.0
Hexachlorocyclohexane, alpha isomer	<1.0
Hexachlorocyclohexane, gamma isomer	<1.0
Heptachlor	<1.0
Aldrin	<1.0
Heptachlor Epoxide	<1.0
t-Chlordane	<1.0
c-Chlordane	<1.0
O,P'-DDE	<1.0
P,P'-DDE	<1.0
Dieldrin	<1.0
Endrin	<1.0
O,P'-DDD	<1.0
P,P'-DDD	<1.0



O,P'-DDT	<1.0
P,P'-DDT	<1.0
Total DDT	<1.0
Methoxychlor	<1.0
Mirex	<1.0
Endosulfan I	<1.0
Endosulfan II	<1.0
Endosulfan Sulfate	<1.0
Endrin Aldehyde	<1.0
Endrin Ketone	<1.0
Toxaphene	<1.0
Technical Chlordane	<1.0
Aroclor 1016	<1.0
Aroclor 1221	<1.0
Aroclor 1232	<1.0
Aroclor 1242	<1.0
Aroclor 1248	<1.0
Aroclor 1254	<1.0
Aroclor 1260	<1.0
Aroclor 1262	<1.0
Aroclor 1268	<1.0
Methylene Chloride	<1.
1,2-Dichloroethene	<1.
Chloroform	<1.
1,2-Dichloroethane	<1.
1,1,1-Trichloroethane	25.
Carbon Tetrachloroide	<1.
Bromodichloromethane	<1.
Trichloroethene	1.1
1,2-Dichloropropane	<1.
Dibromochloromethane	<1.
Chloroethyvinyl ether	<1.
Bromoform	<1.
Tetrachloroethene	16.
Chlorobenzene	<1.

CHARLOTTE E. BALDWIN  
SECRETARY



MARTHA LAYNE COLLINS  
GOVERNOR

COMMONWEALTH OF KENTUCKY  
**NATURAL RESOURCES AND ENVIRONMENTAL PROTECTION CABINET**  
DEPARTMENT FOR ENVIRONMENTAL PROTECTION

FORT BOONE PLAZA  
18 REILLY ROAD  
FRANKFORT, KENTUCKY 40601

Report No: B02-676  
SA No: 84-536

TO: Division of Waste Management  
#18 Reilly Road, Fort Boone Plaza  
Frankfort, Kentucky 40601

Re: Kentucky Petroleum  
Waste, Inc.  
Louisville, Ky.

ATTN: Carl Horneman

FROM: William E. Davis, Director *SB for WED*  
Environmental Services

DATE: March 13, 1984

Sample Collector: Mildred Archer Date: 02/29/84 Time: 1045

Sample Identification: Hydraulic Oil Tank

REPORT OF ANALYSIS

Date: Received: 02/29/84 Started: 02/29/84 Finished: 03/08/84

Results:

<u>PARAMETER</u>	<u>CONCENTRATION (mg/kg)</u>
Hexachlorobenzene	<1.0
Hexachlorocyclohexane, alpha isomer	<1.0
Hexachlorocyclohexane, gamma isomer	<1.0
Heptachlor	<1.0
Aldrin	<1.0
Heptachlor Epoxide	<1.0
t-Chlordane	<1.0
c-Chlordane	<1.0
O,P'-DDE	<1.0
P,P'-DDE	<1.0
Dieldrin	<1.0
Endrin	<1.0
O,P'-DDD	<1.0
P,P'-DDD	<1.0

O,P'-DDT	<1.0
P,P'-DDT	<1.0
Total DDT	<1.0
Methoxychlor	<1.0
Mirex	<1.0
Endosulfan I	<1.0
Endosulfan II	<1.0
Endosulfan Sulfate	<1.0
Endrin Aldehyde	<1.0
Endrin Ketone	<1.0
Toxaphene	<1.0
Technical Chlordane	<1.0
Aroclor 1016	<1.0
Aroclor 1221	<1.0
Aroclor 1232	<1.0
Aroclor 1242	<1.0
Aroclor 1248	<1.0
Aroclor 1254	<1.0
Aroclor 1260	<1.0
Aroclor 1262	<1.0
Aroclor 1268	<1.0
Methylene Chloride	<1.
1,2-Dichloroethene	<1.
Chloroform	<1.
1,2-Dichloroethane	<1.
1,1,1-Trichloroethane	640.
Carbon Tetrachloroide	<1.
Bromodichloromethane	<1.
Trichloroethene	110.
1,2-Dichloropropane	<1.
Dibromochloromethane	<1.
Chloroethyvinyl ether	<1.
Bromoform	<1.
Tetrachloroethene	770.
Chlorobenzene	<1.

CHARLOTTE E. BALDWIN  
SECRETARY



MARTHA LAYNE COLLINS  
GOVERNOR

COMMONWEALTH OF KENTUCKY  
NATURAL RESOURCES AND ENVIRONMENTAL PROTECTION CABINET  
DEPARTMENT FOR ENVIRONMENTAL PROTECTION

FORT BOONE PLAZA  
18 REILLY ROAD  
FRANKFORT, KENTUCKY 40601

Report No: B02-677  
SA No: 84-537

TO: Division of Waste Management  
#18 Reilly Road, Fort Boone Plaza  
Frankfort, Kentucky 40601

Re: Kentucky Petroleum  
Waste, Inc.  
Louisville, Ky.

ATTN: Carl Horneman

FROM: William E. Davis, Director *SB for WED*  
Environmental Services

DATE: March 13, 1984

Sample Collector: Mildred Archer Date: 02/29/84 Time: 1050

Sample Identification: Crude Oil Tank

REPORT OF ANALYSIS

Date: Received: 02/29/84 Started: 02/29/84 Finished: 03/08/84

Results:

<u>PARAMETER</u>	<u>CONCENTRATION (mg/kg)</u>
Hexachlorobenzene	<1.0
Hexachlorocyclohexane, alpha isomer	<1.0
Hexachlorocyclohexane, gamma isomer	<1.0
Heptachlor	<1.0
Aldrin	<1.0
Heptachlor Epoxide	<1.0
t-Chlordane	<1.0
c-Chlordane	<1.0
O,P'-DDE	<1.0
P,P'-DDE	<1.0
Dieldrin	<1.0
Endrin	<1.0
O,P'-DDD	<1.0
P,P'-DDD	<1.0

O,P'-DDT	<1.0
P,P'-DDT	<1.0
Total DDT	<1.0
Methoxychlor	<1.0
Mirex	<1.0
Endosulfan I	<1.0
Endosulfan II	<1.0
Endosulfan Sulfate	<1.0
Endrin Aldehyde	<1.0
Endrin Ketone	<1.0
Toxaphene	<1.0
Technical Chlordane	<1.0
Aroclor 1016	<1.0
Aroclor 1221	<1.0
Aroclor 1232	<1.0
Aroclor 1242	<1.0
Aroclor 1248	<1.0
Aroclor 1254	<1.0
Aroclor 1260	<1.0
Aroclor 1262	<1.0
Aroclor 1268	<1.0
Methylene Chloride	<1.
1,2-Dichloroethene	<1.
Chloroform	<1.
1,2-Dichloroethane	<1.
1,1,1-Trichloroethane	19.
Carbon Tetrachloroide	<1.
Bromodichloromethane	<1.
Trichloroethene	15.
1,2-Dichloropropane	<1.
Dibromochloromethane	<1.
Chloroethyvinyl ether	<1.
Bromoform	<1.
Tetrachloroethene	70.
Chlorobenzene	<1.

CHARLOTTE E. BALDWIN  
SECRETARY



MARTHA LAYNE COLLINS  
GOVERNOR

COMMONWEALTH OF KENTUCKY  
NATURAL RESOURCES AND ENVIRONMENTAL PROTECTION CABINET  
DEPARTMENT FOR ENVIRONMENTAL PROTECTION

FORT BOONE PLAZA  
18 REILLY ROAD  
FRANKFORT, KENTUCKY 40601

Report No: B02-678  
SA No: 84-538

TO: Division of Waste Management  
#18 Reilly Road, Fort Boone Plaza  
Frankfort, Kentucky 40601

Re: Kentucky Petroleum  
Waste, Inc.  
Louisville, Ky.

ATTN: Carl Horneman

FROM: William E. Davis, Director *SB for WED*  
Environmental Services

DATE: March 13, 1984

Sample Collector: Mildred Archer Date: 02/29/84 Time: 1055

Sample Identification: Crude Oil Tank

REPORT OF ANALYSIS

Date: Received: 02/29/84 Started: 02/29/84 Finished: 03/08/84

Results:

<u>PARAMETER</u>	<u>CONCENTRATION (mg/kg)</u>
Hexachlorobenzene	<1.0
Hexachlorocyclohexane, alpha isomer	<1.0
Hexachlorocyclohexane, gamma isomer	<1.0
Heptachlor	<1.0
Aldrin	<1.0
Heptachlor Epoxide	<1.0
t-Chlordane	<1.0
c-Chlordane	<1.0
O,P'-DDE	<1.0
P,P'-DDE	<1.0
Dieldrin	<1.0
Endrin	<1.0
O,P'-DDD	<1.0
P,P'-DDD	<1.0

O,P'-DDT	<1.0
P,P'-DDT	<1.0
Total DDT	<1.0
Methoxychlor	<1.0
Mirex	<1.0
Endosulfan I	<1.0
Endosulfan II	<1.0
Endosulfan Sulfate	<1.0
Endrin Aldehyde	<1.0
Endrin Ketone	<1.0
Toxaphene	<1.0
Technical Chlordane	<1.0
Aroclor 1016	<1.0
Aroclor 1221	<1.0
Aroclor 1232	<1.0
Aroclor 1242	<1.0
Aroclor 1248	<1.0
Aroclor 1254	<1.0
Aroclor 1260	<1.0
Aroclor 1262	<1.0
Aroclor 1268	<1.0
Methylene Chloride	<1.
1,2-Dichloroethene	<1.
Chloroform	<1.
1,2-Dichloroethane	<1.
1,1,1-Trichloroethane	15.
Carbon Tetrachloroide	<1.
Bromodichloromethane	<1.
Trichloroethene	19.
1,2-Dichloropropane	<1.
Dibromochloromethane	<1.
Chloroethyvinyl ether	<1.
Bromoform	<1.
Tetrachloroethene	27.
Chlorobenzene	<1.

CHARLOTTE E. BALDWIN  
SECRETARY



MARTHA LAYNE COLLINS  
GOVERNOR

COMMONWEALTH OF KENTUCKY  
**NATURAL RESOURCES AND ENVIRONMENTAL PROTECTION CABINET**  
DEPARTMENT FOR ENVIRONMENTAL PROTECTION

FORT BOONE PLAZA  
18 REILLY ROAD  
FRANKFORT, KENTUCKY 40601

Report No: B02-679  
SA No: 84-539

TO: Division of Waste Management  
#18 Reilly Road, Fort Boone Plaza  
Frankfort, Kentucky 40601

Re: Kentucky Petroleum  
Waste, Inc.  
Louisville, Ky.

ATTN: Carl Horneman

FROM: William E. Davis, Director *SB for WED*  
Environmental Services

DATE: March 13, 1984

Sample Collector: Mildred Archer Date: 02/29/84 Time: 1100

Sample Identification: Waste Oil Tank # 4

REPORT OF ANALYSIS

Date:

Received: 02/29/84 Started: 02/29/84 Finished: 03/08/84

Results:

<u>PARAMETER</u>	<u>CONCENTRATION (mg/kg)</u>
Hexachlorobenzene	<1.0
Hexachlorocyclohexane, alpha isomer	<1.0
Hexachlorocyclohexane, gamma isomer	<1.0
Heptachlor	<1.0
Aldrin	<1.0
Heptachlor Epoxide	<1.0
t-Chlordane	<1.0
c-Chlordane	<1.0
O,P'-DDE	<1.0
P,P'-DDE	<1.0
Dieldrin	<1.0
Endrin	<1.0
O,P'-DDD	<1.0
P,P'-DDD	<1.0



O,P'-DDT	<1.0
P,P'-DDT	<1.0
Total DDT	<1.0
Methoxychlor	<1.0
Mirex	<1.0
Endosulfan I	<1.0
Endosulfan II	<1.0
Endosulfan Sulfate	<1.0
Endrin Aldehyde	<1.0
Endrin Ketone	<1.0
Toxaphene	<1.0
Technical Chlordane	<1.0
Aroclor 1016	<1.0
Aroclor 1221	<1.0
Aroclor 1232	<1.0
Aroclor 1242	<1.0
Aroclor 1248	<1.0
Aroclor 1254	<1.0
Aroclor 1260	<1.0
Aroclor 1262	<1.0
Aroclor 1268	<1.0
Methylene Chloride	<1.
1,2-Dichloroethene	<1.
Chloroform	<1.
1,2-Dichloroethane	<1.
1,1,1-Trichloroethane	81.
Carbon Tetrachloroide	<1.
Bromodichloromethane	<1.
Trichloroethene	<1.
1,2-Dichloropropane	<1.
Dibromochloromethane	<1.
Chloroethyvinyl ether	<1.
Bromoform	<1.
Tetrachloroethene	104.
Chlorobenzene	<1.

CHARLOTTE E. BALDWIN  
SECRETARY



MARTHA LAYNE COLLINS  
GOVERNOR

COMMONWEALTH OF KENTUCKY  
**NATURAL RESOURCES AND ENVIRONMENTAL PROTECTION CABINET**  
DEPARTMENT FOR ENVIRONMENTAL PROTECTION

FORT BOONE PLAZA  
18 REILLY ROAD  
FRANKFORT, KENTUCKY 40601

Report No: B02-680  
SA No: 84-540

TO: Division of Waste Management  
#18 Reilly Road, Fort Boone Plaza  
Frankfort, Kentucky 40601

Re: Kentucky Petroleum  
Waste, Inc.  
Louisville, Ky.

ATTN: Carl Horneman

FROM: William E. Davis, Director *SB for WED*  
Environmental Services

DATE: March 13, 1984

Sample Collector: Mildred Archer Date: 02/29/84 Time: 1105

Sample Identification: Waste Oil Tank # 5

REPORT OF ANALYSIS

Date: Received: 02/29/84 Started: 02/29/84 Finished: 03/08/84

Results:

<u>PARAMETER</u>	<u>CONCENTRATION (mg/kg)</u>
Hexachlorobenzene	<1.0
Hexachlorocyclohexane, alpha isomer	<1.0
Hexachlorocyclohexane, gamma isomer	<1.0
Heptachlor	<1.0
Aldrin	<1.0
Heptachlor Epoxide	<1.0
t-Chlordane	<1.0
c-Chlordane	<1.0
O,P'-DDE	<1.0
P,P'-DDE	<1.0
Dieldrin	<1.0
Endrin	<1.0
O,P'-DDD	<1.0
P,P'-DDD	<1.0

O,P'-DDT	<1.0
P,P'-DDT	<1.0
Total DDT	<1.0
Methoxychlor	<1.0
Mirex	<1.0
Endosulfan I	<1.0
Endosulfan II	<1.0
Endosulfan Sulfate	<1.0
Endrin Aldehyde	<1.0
Endrin Ketone	<1.0
Toxaphene	<1.0
Technical Chlordane	<1.0
Aroclor 1016	<1.0
Aroclor 1221	<1.0
Aroclor 1232	<1.0
Aroclor 1242	<1.0
Aroclor 1248	<1.0
Aroclor 1254	<1.0
Aroclor 1260	<1.0
Aroclor 1262	<1.0
Aroclor 1268	<1.0
Methylene Chloride	<1.
1,2-Dichloroethene	<1.
Chloroform	<1.
1,2-Dichloroethane	<1.
1,1,1-Trichloroethane	117.
Carbon Tetrachloroide	<1.
Bromodichloromethane	<1.
Trichloroethene	<1.
1,2-Dichloropropane	<1.
Dibromochloromethane	<1.
Chloroethyvinyl ether	<1.
Bromoform	<1.
Tetrachloroethene	170.
Chlorobenzene	<1.

COMMONWEALTH OF KENTUCKY  
NATURAL RESOURCES AND ENVIRONMENTAL  
PROTECTION CABINET

FILED

OCT 03 1988

IN THE MATTER OF:

Kentucky Petroleum Waste, Inc.  
6911 Grade Lane  
Louisville, Kentucky 40213  
KYD06-156-4001

DIVISION OF HEARINGS

AGREED ORDER WM87-059C

\* \* \* \* \*

Statements of Fact

1. The Natural Resources and Environmental Protection Cabinet (hereinafter the Cabinet) is charged with the statutory duty of enforcing the laws of the Commonwealth of Kentucky relating to waste management under KRS Chapter 224;
2. Kentucky Petroleum Waste, Inc., (hereinafter the Firm) operates a petroleum recycling plant in Louisville, Kentucky, for the production of fuels for industrial uses from both new and used petroleum products;
3. The Firm registered as a Hazardous Waste Fuel Marketer and Off Specification Used Oil Fuel Marketer effective January 29, 1986;
4. The Firm amended its registration to include the following categories:
  - A. Recycler;
  - B. Off Specification Used Oil Fuel Marketer and Burner; and
  - C. Specification Used Oil Fuel Marketer effective June 1, 1987;
5. An inspection conducted July 7, 1986, revealed the Firm to be in violation of standards applicable to Used Oil Fuel Marketers and Burners as follows:
  - A. The Firm failed to provide invoices for shipment of off specification used oil to the receiving facility in violation of 401 KAR 36:050, Section 4(2)(d);

- B. The Firm failed to provide copies of the notices required to burners and other marketers in violation of 401 KAR 36:050, Section 4(2)(e); and
- C. The Firm failed to maintain a record of the analysis used to make the determination of whether the used oil fuel was specification or off-specification in violation of 401 KAR 36:050, Section 4(2)(f).

NOW, THEREFORE, in the interest of settling all claims and controversies involving these matters, the Natural Resources and Environmental Protection Cabinet and Kentucky Petroleum Waste, Inc., hereby consent to entry of this AGREED ORDER and agree as follows:

- 1. The above statements of fact are true and correct.
- 2. By August 15, 1988, the Firm shall submit to the Division a sample copy of the invoice it sends to the receiving facility when initiating a shipment of off-specification used oil as required by 401 KAR 36:050, Section 4(d).
- 3. The Firm shall send each receiving facility an invoice with each shipment of off-specification used oil in compliance with 401 KAR 36:050, Section 4(d).
- 4. By August 15, 1988, the Firm shall submit to the Division a sample copy of the notices required by 401 KAR 36:050, Section 4(e).
- 5. The Firm shall comply with the requirements that notices be obtained from burners or other marketers before initiating the first shipment of off-specification used oil in compliance with 401 KAR 36:050, Section 4(e).
- 6. By August 15, 1988, the Firm shall submit to the Division copies of the analyses for the time period June 1, 1987, through May 31, 1988, used to make the determination that its used oil fuel meets the specification as required by 401 KAR 36:050, Section 4(f).

7. The Firm shall maintain all records required by 401 KAR 36:050, Section 4(f) for three years and shall comply with all other recordkeeping requirements of 401 KAR 36:050, Section 4(f) not otherwise specified in this ORDER.
8. By August 15, 1988, the Firm shall submit a plan to the Division outlining procedures it shall follow to prevent its acceptance of hazardous waste mixed with oil picked up from its customers. The plan shall contain a schedule for implementation of the procedures outlined therein.
9. The Firm shall implement the plan upon approval by the Division.
10. Kentucky Petroleum Waste, Inc., shall pay a civil penalty of Five Hundred Dollars (\$500) by certified check, cashier's check, or money order payable to "Kentucky State Treasurer" and submitted to the Docket Coordinator, Division of Hearings, Natural Resources and Environmental Protection Cabinet, Capital Plaza Tower, Frankfort, Kentucky 40601 within twenty (20) days of execution of this ORDER.
11. This AGREED ORDER or any of its provisions, conditions or dates contained herein may be amended, modified, deleted or extended only upon a written request stating the reasons therefor; and by the approval and written Order of the Secretary or his designee. Any such amendment, modification, deletion or extension shall not affect any other provision, condition or date within the AGREED ORDER unless specifically and expressly so provided by the written Order.
12. This AGREED ORDER addresses only those violations specifically set out or referred to in this AGREED ORDER and nothing contained herein shall be construed to waive or limit any remedy or cause of action of the Cabinet based on violations of other laws or regulations under the jurisdiction of the Cabinet.

13. Strict compliance with all the terms of this AGREED ORDER shall be considered as a satisfactory resolution of the violations of KRS Chapter 224 specifically set out in this ORDER.
14. Failure of Kentucky Petroleum Waste, Inc., to comply strictly with the terms of this AGREED ORDER shall be grounds for the Cabinet to seek enforcement of this ORDER as well as penalties for its violation and any appropriate administrative or judicial action under KRS Chapter 224.
15. Each separate provision, condition or duty contained herein may be the basis for an enforcement action for a separate violation and penalty pursuant to KRS Chapter 224, upon failure of Kentucky Petroleum Waste, Inc., to comply strictly with the terms of this ORDER.
16. Kentucky Petroleum Waste, Inc., waives its rights to a formal hearing to contest the violations alleged herein.
17. This AGREED ORDER shall be of no force or effect unless and until it is executed by the Secretary or his designee as evidenced by his signature thereon. Should this Order contain any date by which the Defendant is to take any action, and should the Secretary sign the Order after that date, then the Defendant is nonetheless obligated to have taken the action by the date contained in this Order.

AGREED TO BY:

Charles Shiff  
Authorized Representative  
Kentucky Petroleum Waste, Inc.

8-29-88  
Date

Donald F. Harker  
Donald F. Harker, Director  
Division of Waste Management

9-1-88  
Date

James T. Corum  
James T. Corum, D.M.D., M.P.H.  
Commissioner  
Department for Environmental Protection

9-14-88  
Date

Robert J. Galt  
Attorney, Office of General Counsel

9/22/88  
Date

Arthur L. Williams  
Arthur L. Williams, Acting General Counsel  
Office of General Counsel

9/23/88  
Date

\*\*\*\*\*

### ORDER

WHEREFORE, the Secretary or his designee, taking cognizance of the agreement of the parties as evidenced herein, does hereby order that the foregoing AGREED ORDER be, and is hereby entered as the final Order of this Natural Resources and Environmental Protection Cabinet this 29 day of Sept., 1988.

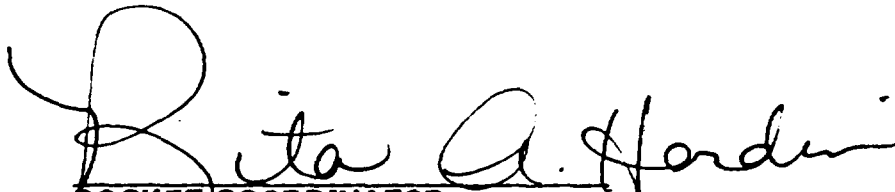
Carl H. Bradley  
Carl H. Bradley, Secretary  
Natural Resources and  
Environmental Protection Cabinet



CERTIFICATE OF SERVICE

I hereby certify that a true and accurate copy of the foregoing AGREED ORDER was mailed, pre-paid, to the following this the 3rd day of October, 1988.

Kentucky Petroleum Waste, Inc.  
6911 Grade Lane  
Louisville, Kentucky

  
DOCKET COORDINATOR

DISTRIBUTION:

Division of Waste Management  
Order File  
Attorney, Office of General Counsel

- Hon. Robert J. Yarbrough

This copy to main file  
Additional copies to:  
Louisville R.O.  
Lou Martin  
Enforcement file (CSO)  
U.S. EPA

HA 8

REFERENCE # 15

**AVAILABILITY**  
**OF**  
**GROUND WATER FOR DOMESTIC USE**  
**IN**  
**JEFFERSON COUNTY, KENTUCKY**

*By L. M. MacCary*

1956

IN  
JEFFERSON COUNTY, KENTUCKY

By L. M. MacCary

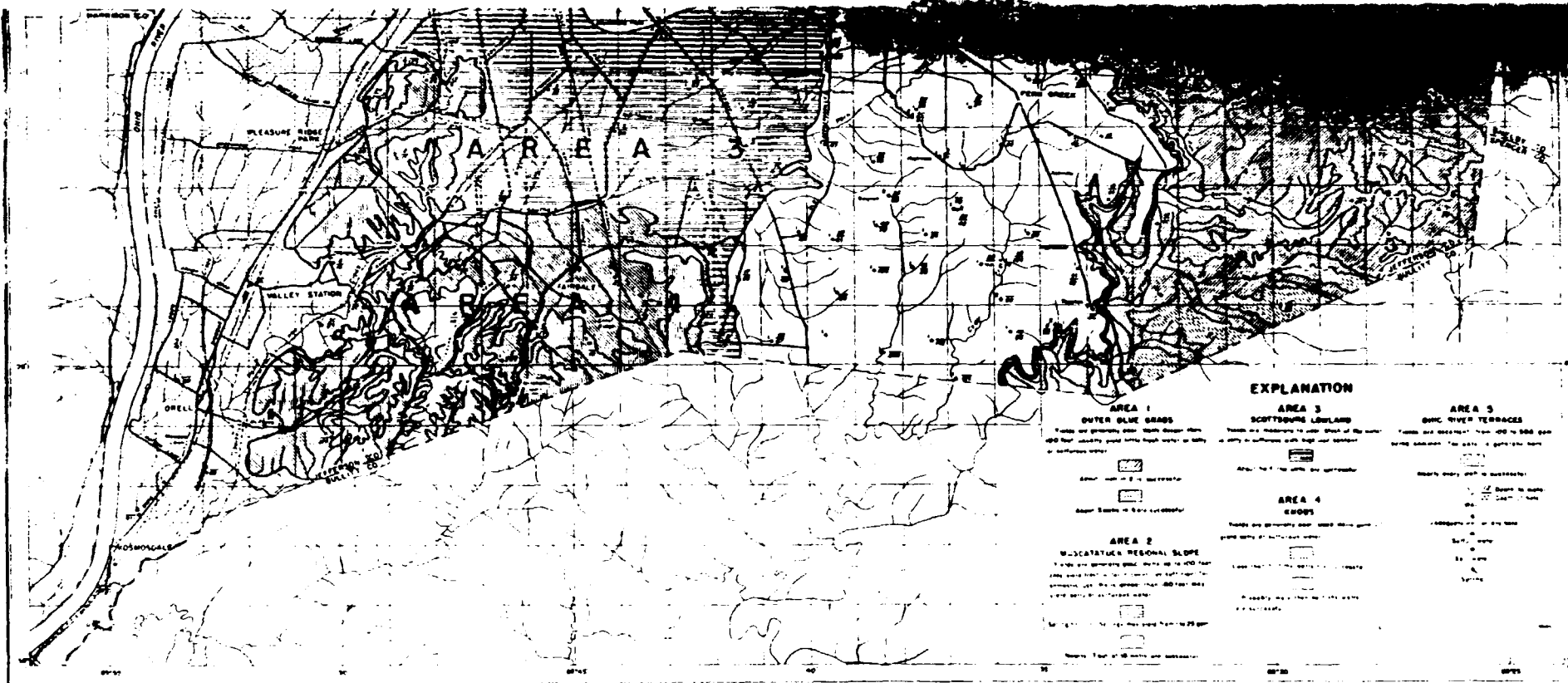
1956

DEPARTMENT OF THE INTERIOR  
UNITED STATES GEOLOGICAL SURVEY

HYDROLOGIC INVESTIGATIONS ATLAS HA 8

*Prepared in cooperation with the State of Kentucky  
Agricultural and Industrial Development Board*

For sale by the U. S. Geological Survey  
Washington 25, D. C.—Price 75 cents



MAP OF JEFFERSON COUNTY, KENTUCKY, SHOWING THE AVAILABILITY OF GROUND WATER TO DRILLED WELLS, DEPTH OF WELL, AND DEPTH TO WATER

#### INTRODUCTION

This atlas showing the availability of ground water for domestic use in Jefferson County, Ky., is presented to residents and drillers of the region. Because the cost of drilling a domestic well is several dollars a foot, it is advantageous to both driller and owner to know the probability of success of a well before drilling is begun. The map and tables will make it possible to estimate the chances of success of a drilled domestic well anywhere in the county.

Jefferson County borders the Ohio River in the north-central part of Kentucky and covers an area of 394 square miles. Louisville, the county seat, is the largest city in the State. Many good Federal and State highways traverse the county and hard-surfaced rural roads make most of the region accessible in all weather conditions.

#### SURFACE FEATURES

Jefferson County lies on the west flank of the Cincinnati arch, a major structural feature within the Interior Low Plateaus physiographic province (Fenneman, 1938). The topography of the area ranges from nearly flat to fairly rugged. The eastern part of the county is drained by Floyds Fork, and the rest of the county by

smaller tributaries of the Ohio River. The physiographic units, based on topography and geology, include the Outer Blue Grass, Muscatuck regional slope, Scottsburg lowland, and Knobs. The Muscatuck regional slope and the Scottsburg lowland are subdivisions of the Outer Blue Grass, but they are treated as separate units in this report. The alluvial terraces along the Ohio River constitute a fifth physiographic subdivision.

That part of the county lying east of a line through Thixton, Jeffersonton, and Avoca is in the Outer Blue Grass. This dissected area, a part of the Lexington peninsula, is underlain by shale and limestone of Late Ordovician age. To the west the Outer Blue Grass grades into the Muscatuck regional slope, a rolling surface developed on Silurian and Devonian limestones. Along a line connecting Okolona, Russell, and Louisville the regional slope merges with the Scottsburg lowland, a plain of low relief which is underlain by shale of Late Devonian age. West and south of the lowland lies the Knobs, a highly dissected area developed on shale, sandstone, and limestone of Mississippian age. The eastern edge of this upland forms the so-called Knobstone escarpment.

The alluvial terraces along the Ohio River form a distinct physiographic unit. The river

has carved a deep, wide channel through rocks ranging in age from Ordovician to Mississippian. Throughout nearly all its length in Jefferson County the river flows on glacial outwash, which has filled the old channel to a depth of 100 feet or more. The only exception to this is at the Falls of the Ohio where the river flows on exposed bedrock of Devonian age.

#### AVAILABILITY OF GROUND WATER

The occurrence of ground water in Jefferson County is controlled by several factors among which the nature of the openings in the rocks and the westerly regional dip are of prime importance. Limestone, sandstone, and shale make up the bulk of the consolidated rocks. Limestone may transmit large amounts of water through openings along joints and bedding planes enlarged by solution. Sandstone may transmit water through openings along bedding planes and joints and also through intergranular pores. Shale beds are important, not generally as water carriers, but because they may impede the upward or downward motion of water from other beds. Large quantities of ground water move through the intergranular openings in the unconsolidated sand and gravel of the alluvium (glacial outwash) along the Ohio River. Ground water moves in the bedrocks westward down the

regional dip, and to some extent northward or northwestward across the dip, to discharge into the alluvium and thence to the Ohio River.

Except in the area of alluvial terraces along the Ohio River, about half the wells drilled in Jefferson County are failures as sources of household water supplies, because they either yield salty or sulfurous water or do not yield enough water. The following discussion explains the chances of obtaining a successful well in each of the physiographic subdivisions of the county. These subdivisions are outlined and numbered on plate 1. The water-bearing properties of the rock formations in the county are summarized in table 1; information on individual wells and springs is presented in tables 2 and 3; table 4 lists chemical analyses of water from some typical wells and springs; and figure 1 shows graphically the results of these analyses.

#### Area 1--Outer Blue Grass

The Outer Blue Grass, which includes about one-fifth the area of the county along the eastern boundary, is underlain by shale and limestone of Late Ordovician age. The shale beds total about 150 feet in thickness and erode to produce ridges separated by relatively broad, flat stream valleys.

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enough fresh water for household use. One spring in the Sellersburg limestone formerly served 11 tenant houses and a dairy barn but is now abandoned because a municipal water supply has become available.

#### Area 3--Scottsburg Lowland

The Scottsburg lowland, which includes a small area in the south-central part of the county, offers a better chance for a successful drilled well than the Outer Blue Grass but not so good as the Muscatatuck regional slope. Of the 12 drilled wells inventoried in the lowland, 6 produced enough fresh water for household use and 6 produced salty or sulfurous water.

The New Albany shale, a black fissile carbonaceous shale about 100 feet thick, underlies almost the entire lowland. It is probable that water obtained in wells comes from openings along fractures in the shale. According to one driller, wells can be obtained to depths as great as 40 feet. Below this depth openings in the shale are very small and no water or only a little salty or sulfurous water is generally obtained. The water in some of the wells contains enough iron to stain laundry and bathroom fixtures.

Because of the poor drainage in the tight shale, the water table during wet seasons stands within a few feet of the surface in much of the lowland area. Failure of septic tanks to function properly is common in this area.

#### Area 4--Knobs

The Knobs, a region of ridges, spurs, and knobs, is a small area in the southwestern part of the county. Some of the ridges are flat-topped, owing to a capping of thin but resistant limestones and sandstones. The typical knobs develop where these resistant caps are small or missing. The chances of obtaining a successful drilled well are about the same in the Knobs as in the Scottsburg lowland. However, the topography and geology of the Knobs are much more varied, and the chances of obtaining a successful well in some parts of the upland are much better than in other parts. Of 13 drilled wells inventoried in the Knobs, 8 produced enough fresh water for domestic use.

The New Providence shale, a soft green shale about 150 feet thick, crops out in the lower parts of the Knobs, especially along the eastern and northern boundaries where it merges with the Scottsburg lowland. A few successful wells were found in the outcrop area of the New Providence shale, but it is probable that less than half the wells drilled will be successful. The shale slakes readily and thus has a tendency to fill up any uncased hole in the formation.

The Kenwood sandstone, consisting of 40 feet of fine-grained gray to brown sandstone alternating with shale, caps a few of the knobs and low hills and crops out along the sides of the higher ridges. It yields water to a few wells in its outcrop area.

The Rosewood shale, a blue-gray siliceous shale about 190 feet thick, crops out in the southwestern third of the Knobs. A few successful wells have been obtained in the Rosewood shale in its outcrop area.

The Holtsclaw sandstone, a thick-bedded fine-grained blue-gray sandstone, is only 20 feet thick and crops out as a very narrow band near the top of the highest ridges in the Knobs. It probably yields some water to wells that are drilled into it through the overlying Warsaw limestone.

The Warsaw limestone is a fine-grained siliceous, argillaceous limestone containing geodes and chert. This 65- to 80-foot limestone caps the highest ridges in the Knobs. Some of the wells drilled on top of these ridges probably obtain water from the limestone and some from the underlying Holtsclaw sandstone.

#### Area 5--Ohio River Alluvial Terraces

The alluvial terraces on the Ohio River along the northwest boundary of the area include about one-fifth of the county. Almost every well drilled in the alluvium yields enough water of a quality satisfactory for household use. The water is generally hard, but can be softened for household use by commercial softeners.

Most of the wells in this area obtain water from the alluvium, but some industrial wells produce from the limestone bedrock beneath the alluvial sand and gravel. In 1952 about 25 million gallons of water per day was pumped from the alluvium for industrial use. Yields of about 100 gpm are average for industrial users and yields of more than 500 gpm are not uncommon.

The ground water conditions in this area have been described in detail by Rorabaugh (1946, 1956) and Rorabaugh, Schrader, and Laird (1953).

#### SELECTED BIBLIOGRAPHY

- Butts, Charles, 1915, *Geology and mineral resources of Jefferson County, Ky.*: Ky. Geol. Survey, ser. 4, v. 3, 270 p.
- Fenneman, N. M., 1938, *Physiography of Eastern United States*: New York, McGraw-Hill Book Co., Inc., 714 p.
- Rorabaugh, M. I., 1946, *Ground-water resources of the southwestern part of the Louisville area, Kentucky*: Rubber Reserve Company, City of Louisville, and Jefferson County (duplicated rept.).
- 1956, *Ground-water resources of the northeastern part of the Louisville area, Kentucky*: U. S. Geol. Survey Water-Supply Paper 1360-B.
- Rorabaugh, M. I., Schrader, F. F., and Laird, L. B., 1953, *Water resources of the Louisville area, Kentucky and Indiana*: U. S. Geol. Survey Circ. 276.

Table 1.—Water-bearing formations in Jefferson County, Ky.

Formation	Thickness (feet)	Character of material	Water-bearing properties
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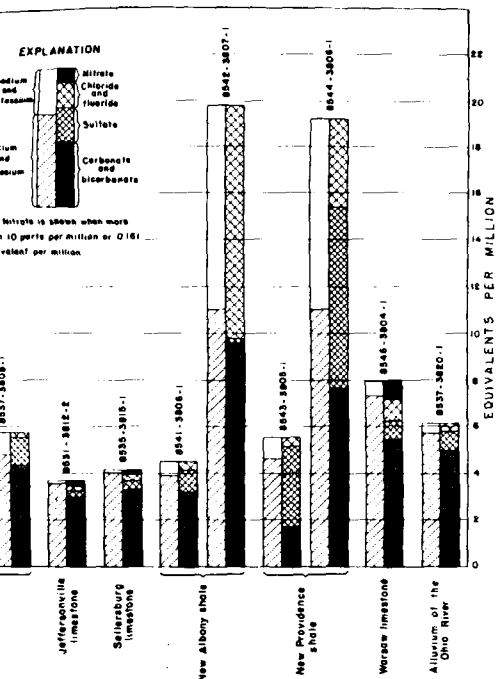
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coarse-grained light- to dark-gray limestone about 20 feet thick. Above it is the Sellersburg limestone, a 14-foot limestone of variable character. These two limestones cap the highland areas in the northern part of the county and descend to valley level in places along the border of the Ohio River alluvial terraces. About 3 of 4 wells drilled in these limestones produce

of fine-grained gray to brown sandstone alternating with shale, caps a few of the knobs and low hills and crops out along the sides of the higher ridges. It yields water to a few wells in its outcrop area.

Table 1.—Water-bearing formations in Jefferson County, Ky.

System	Series	Group	Formation	Thickness (feet)	Character of material	Water-bearing properties
Quaternary	Recent		Alluvium		Soil, clay, fine sand.	Not important as an aquifer.
	Pleistocene		Alluvium of glacial-outwash origin along the Ohio River	0-130	Gravel, sand, and clay deposited in the buried valley of the Ohio River.	Stores large quantities of fresh water. Yields of 100 to 500 gpm are common.
Mississippian	Osage	Meramec	Warsaw limestone	65-80	Fine-grained limestone with geodes and chert, siliceous and argillaceous. Some shale.	Yield some water to ridge-top wells.
			Holtzclaw sandstone	15-25	Fine-grained sandstone, thick-bedded, soft.	
			Rosewood shale	190	Bluish shale with thin lenses of limestone.	Not commonly a source of water.
			Kenwood sandstone	40	Thin beds of fine-grained greenish sandstone in bluish shale.	Yields some water to domestic wells.
			New Providence shale	150-160	Soft clay shale, green or bluish.	Not commonly a source of water.
Devonian	Upper		New Albany shale	90-100	Black shale, carbonaceous and fissile.	Yields water from openings along fractures. Water generally has high iron content.
	Middle		Sellersburg limestone	12-24	Light-gray limestone, thick bedded; upper bed coarse grained; lower bed fine grained.	Yield fresh water to wells in uplands. Springs occur along the contact between these limestones.
			Jeffersonville limestone	20-25	Coarse-grained dark-gray limestone, thick bedded.	
Silurian	Niagara		Louisville limestone	40-100	Fine-grained thick-bedded dolomitic limestone.	Yields fresh water over most of its outcrop area.
			Waldron shale	8-12	Greenish shale, calcareous and magnesian.	Does not produce water. Impedes upward or downward movement of water.
			Laurel dolomite	30-40	Fine-grained dolomite, medium thick bedded.	Generally yields salty or sulfurous water. Many holes are dry.
			Osgood formation	22-30	Thick limestone bed with underlying bed of shale.	Forms spring horizon in many localities.
			Brassfield limestone	3-7	Coarsely crystalline limestone.	Not important as an aquifer owing to small thickness.
Ordovician	Cincinnatian	Richmond	Saluda limestone	30-40	Fine-grained limestone, thick bedded, magnesian.	Yields water to ridge-top wells.
			Liberty formation	38-50	Alternating shale and thin limestone.	
			Waynesville limestone	40-50	Thick-bedded limestone; shale at top and bottom.	Not commonly a source of ground water. Salty or sulfurous water occurs at shallow depths. Many holes are dry.
			Arnheim formation	80-100	Thin limestone interbedded with shale.	



ing quality of water by formation in Jefferson County

#### WELL-NUMBERING SYSTEM USED IN JEFFERSON COUNTY

Jefferson County lies between 85°24' and 85°57' west longitude and 38°00' and 38°22' north latitude. The area has been subdivided by a grid of 1-minute meridians of longitude and 1-minute parallels of latitude. The wells and springs in each of these quadrangles are numbered, beginning with 1, in the order inventoried. A well is designated by a composite of three numbers: the first indicates the minute of longitude as the south edge of the quadrangle; the second, the minute of latitude as the east edge; and the third, the number of the well in that quadrangle. Thus, well 39-05-1 is the first well inventoried in the 1-minute quadrangle west of longitude 85°39' W. and north of latitude 38°05' N. The complete number is shown in the table; only the third part of the number is shown on the map.

**DRASTIC: A Standardized System for Evaluating  
Ground Water Pollution Potential Using  
Hydrogeologic Settings**

**by**

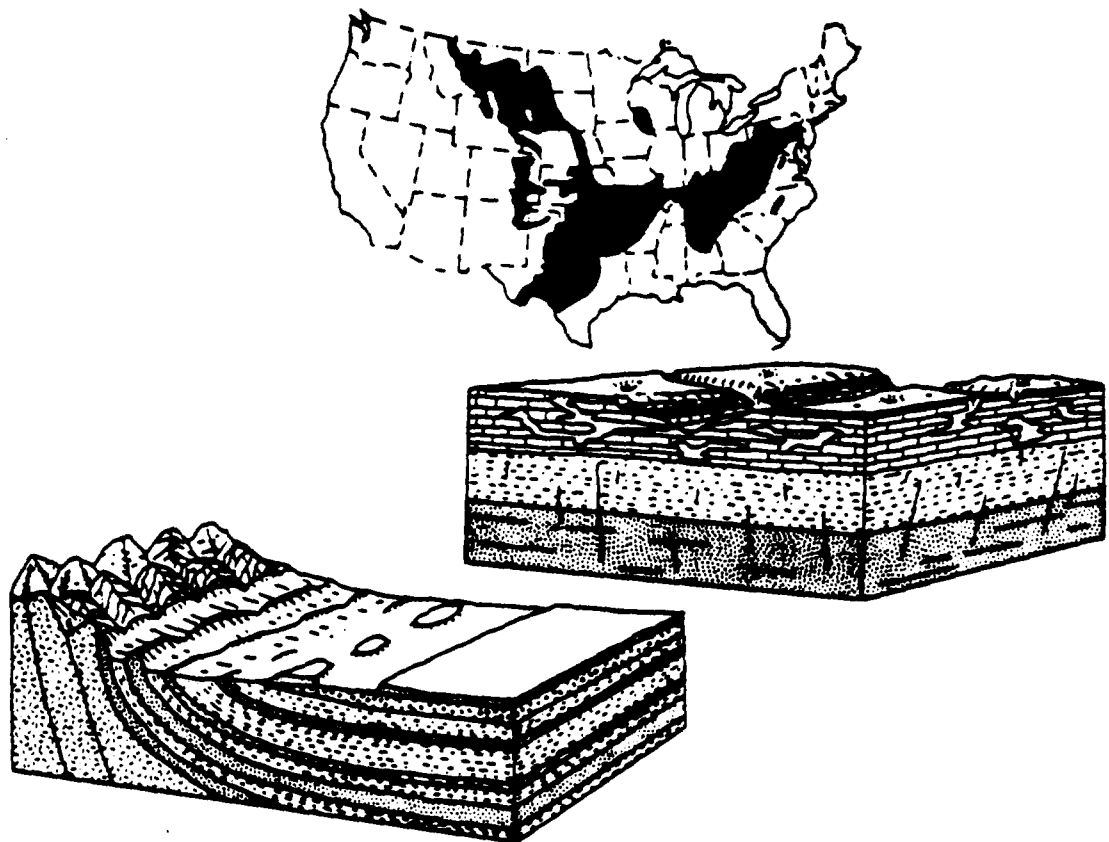
Linda Aller  
Truman Bennett  
Jay H. Lehr  
Rebecca J. Petty  
and  
Glen Hackett  
National Water Well Association  
Dublin, Ohio 43017

Cooperative Agreement CX-810715-01

**Project Officer**  
Jerry Thornhill  
Applications and Assistance Branch  
Robert S. Kerr Environmental Research Laboratory  
Ada, Oklahoma 74820

ROBERT S. KERR ENVIRONMENTAL RESEARCH LABORATORY  
OFFICE OF RESEARCH AND DEVELOPMENT  
U.S. ENVIRONMENTAL PROTECTION AGENCY  
ADA, OKLAHOMA 74820

## 6. NONGLACIATED CENTRAL GROUND-WATER REGION



- 6A Mountain Slopes
- 6B Alluvial Mountain Valleys
- 6C Mountain Flanks
- 6Da Alternating Sandstone, Limestone and  
Shale - Thin Soil
- 6Db Alternating Sandstone, Limestone and  
Shale - Deep Regolith
- 6E Solution Limestone
- 6Fa River Alluvium With Overbank Deposits
- 6Fb River Alluvium Without Overbank Deposits
- 6G Braided River Deposits
- 6H Triassic Basins
- 6I Swamp/Marsh
- 6J Metamorphic/Igneous Domes and Fault  
Blocks
- 6K Unconsolidated and Semi-consolidated  
Aquifers



## 6. NONGLACIATED CENTRAL REGION

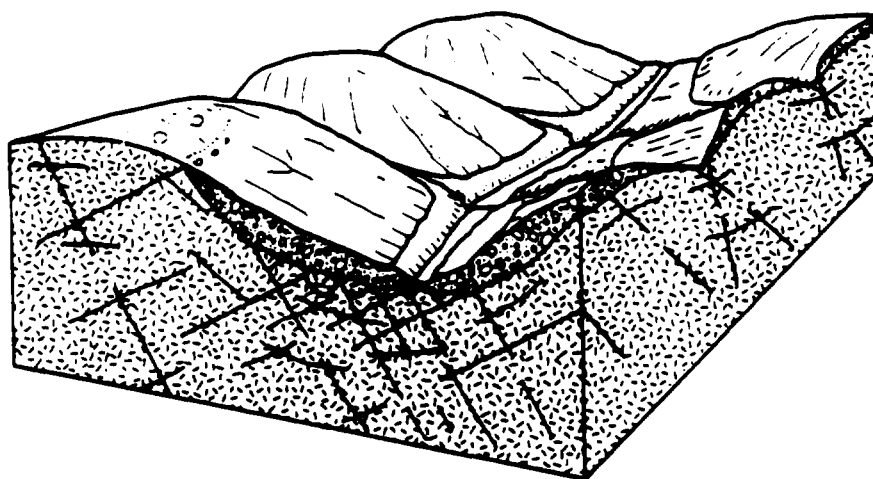
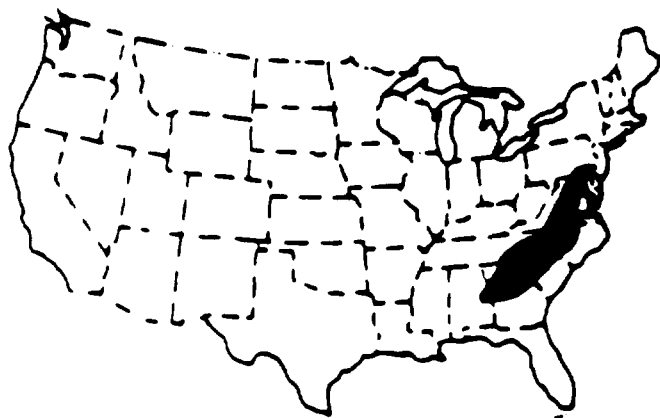
(Thin regolith over fractured sedimentary rocks)

The nonglaciaded Central region is an area of about 1,737,000 km<sup>2</sup> extending from the Appalachian Mountains on the east to the Rocky Mountains on the west. The part of the region in eastern Colorado and northeastern New Mexico is separated from the remainder of the region by the High Plains region. The Nonglaciaded Central region also includes the Triassic Basins in Virginia and North Carolina and the "driftless" area in Wisconsin, Minnesota, Iowa, and Illinois where glacial deposits, if present, are thin and of no hydrologic importance. The region is a topographically complex area that ranges from the Valley and Ridge section of the Appalachian Mountains on the east westward across the Great Plains to the foot of the Rocky Mountains. It includes, among other hilly and mountainous areas, the Ozark Plateaus in Missouri and Arkansas. Altitudes range from 150 m above sea level in central Tennessee and Kentucky to 1,500 m along the western boundary of the region.

The region is also geologically complex. Most of it is underlain by consolidated sedimentary rocks that range in age from Paleozoic to Tertiary and consist largely of sandstone, shale, carbonate rocks (limestone and dolomite), and conglomerate. A small area in Texas and western Oklahoma is underlain by gypsum. Throughout most of the region the rock layers are horizontal or gently dipping. Principal exceptions are the Valley and Ridge section of the Wichita and Arbuckle Mountains in Oklahoma, and the Ouachita Mountains in Oklahoma and Arkansas, in all of which the rocks have been folded and extensively faulted. Around the Black Hills and along the eastern side of the Rocky Mountains the rock layers have been bent up sharply toward the mountains and truncated by erosion. The Triassic Basins in Virginia and North Carolina are underlain by moderate to gently dipping beds of shale and sandstone that have been extensively faulted and invaded by narrow bodies of igneous rock. These basins were formed in Triassic time when major faults in the crystalline rocks of the Piedmont resulted in the formation of structural depressions up to several thousand meters deep and more than 25 km wide and 140 km long.

The land surface in most of the region is underlain by regolith formed by chemical and mechanical breakdown of the bedrock. In the western part of the Great Plains the residual soils are overlain by or intermixed with eolian (wind-laid) deposits. The thickness and composition of the regolith depend on the composition and structure of the parent rock and on the climate, land cover, and topography. In areas underlain by relatively pure limestone, the regolith consists mostly of clay and is generally only a few meters thick. Where the limestones contain chert and in areas underlain by shale and sandstone, the regolith is thicker, up to 30 m or more in some areas. The

8. PIEDMONT BLUE RIDGE GROUND-WATER REGION



- |    |                           |
|----|---------------------------|
| 8A | Mountain Slopes           |
| 8B | Alluvial Mountain Valleys |
| 8C | Mountain Flanks           |
| 8D | Regolith                  |
| 8E | River Alluvium            |
| 8F | Mountain Crests           |
| 8G | Swamp/Marsh               |

## 8. PIEDMONT BLUE RIDGE REGION

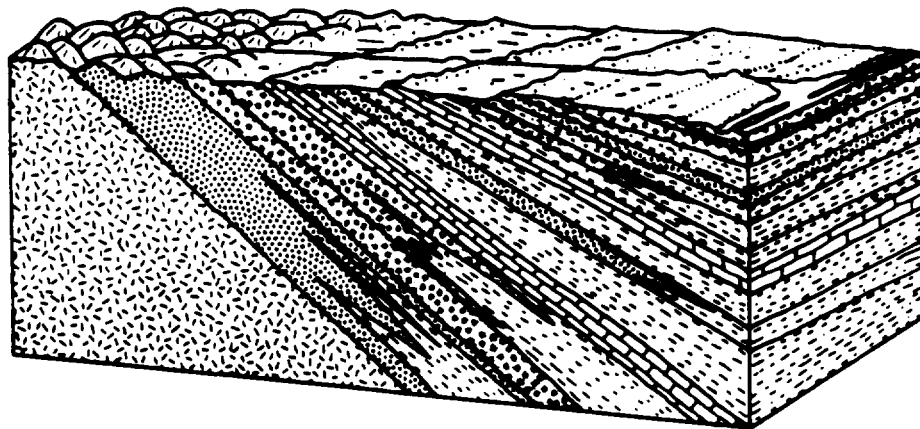
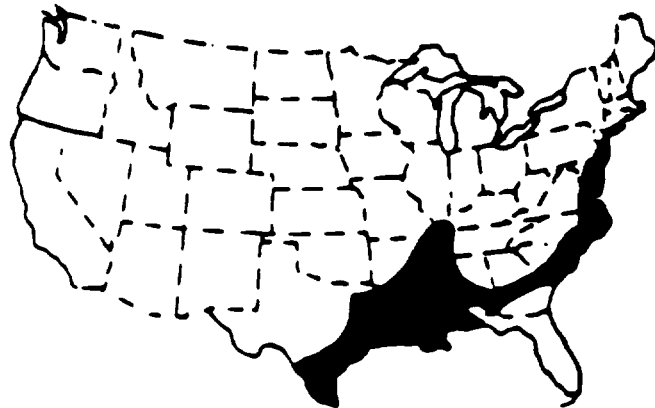
(Thick regolith over fractured crystalline and metamorphosed sedimentary rocks)

The Piedmont and Blue Ridge region is an area of about 247,000 km<sup>2</sup> extending from Alabama on the south to Pennsylvania on the north. The Piedmont part of the region consists of low, rounded hills and long, rolling, northeast-southwest trending ridges whose summits range from about a hundred meters above sea level along its eastern boundary with the Coastal Plain to 500 to 600 m along its boundary with the Blue Ridge area to the west. The Blue Ridge is mountainous and includes the highest peaks east of the Mississippi. The mountains, some of which reach altitudes of more than 2,000 m, have smooth-rounded outlines and are bordered by well-graded streams flowing in relatively narrow valleys.

The Piedmont and Blue Ridge region is underlain by bedrock of Precambrian and Paleozoic age consisting of igneous and metamorphosed igneous and sedimentary rocks. These include granite, gneiss, schist, quartzite, slate, marble, and phyllite. The land surface in the Piedmont and Blue Ridge is underlain by clay-rich, unconsolidated material derived from in situ weathering of the underlying bedrock. This material, which averages about 10 to 20 m in thickness and may be as much as 100 m thick on some ridges, is referred to as saprolite. In many valleys, especially those of larger streams, flood plains are underlain by thin, moderately well-sorted alluvium deposited by the streams. When the distinction between saprolite and alluvium is not important, the term regolith is used to refer to the layer of unconsolidated deposits.

The regolith contains water in pore spaces between rock particles. The bedrock, on the other hand, does not have any significant intergranular porosity. It contains water, instead, in sheetlike openings formed along fractures (that is, breaks in the otherwise "solid" rock). The hydraulic conductivities of the regolith and the bedrock are similar and range from about 0.001 to 1 m day<sup>-1</sup>. The major difference in their water-bearing characteristics is their porosities, that of regolith being about 20 to 30 percent and that of the bedrock about 0.01 to 2 percent. Small supplies of water adequate for domestic needs can be obtained from the regolith through large-diameter bored or dug wells. However, most wells, especially those where moderate supplies of water are needed, are relatively small in diameter and are cased through the regolith and finished with open holes in the bedrock. Although, as noted, the hydraulic conductivity of the bedrock is similar to that of the regolith, bedrock wells generally have much larger yields than regolith wells because, being deeper, they have a much larger available drawdown.

# 10. ATLANTIC AND GULF COASTAL PLAIN GROUND-WATER REGION



- |      |   |
|------|---|
| 10Aa | Regional Aquifers   |
| 10Ab | Unconsolidated & Semi-Consolidated<br>Shallow Surficial Aquifer |
| 10Ba | River Alluvium With Overbank Deposits                           |
| 10Bb | River Alluvium Without Overbank Deposits                        |
| 10C  | Swamp   |

## 10. ATLANTIC AND GULF COASTAL PLAIN

(Complexly interbedded sand, silt, and clay)

The Atlantic and Gulf Coastal Plain region is an area of about 844,000 km<sup>2</sup> extending from Cape Cod, Massachusetts, on the north to the Rio Grande in Texas on the south. This Region does not include Florida and parts of the adjacent States; although those areas are a part of the Atlantic and Gulf Coastal Plain physiographic province, they together form a separate ground-water region. (See region 11, "Southeast Coastal Plain").

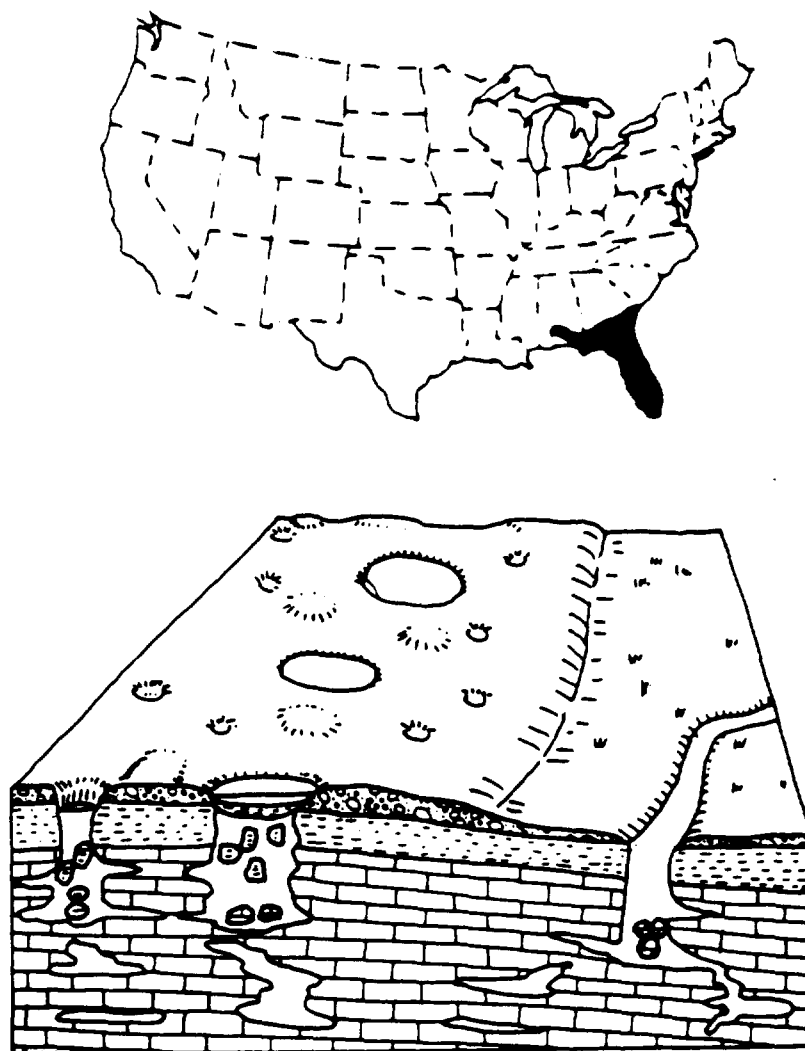
The Atlantic and Gulf Coastal Plain region ranges in width from a few kilometers near its northern end to nearly a thousand kilometers in the vicinity of the Mississippi River. The great width near the Mississippi reflects the effect of a major downwarped zone in the Earth's crust that extends from the Gulf of Mexico to about the confluence of the Mississippi and Ohio Rivers. This area is referred to as the Mississippi embayment.

The topography of the region ranges from extensive, flat, coastal swamps and marshes 1 to 2 m above sea level to rolling uplands, 100 to 250 m above sea level, along the inner margin of the region.

The region is underlain by unconsolidated sediments that consist principally of sand, silt, and clay transported by streams from the adjoining uplands. These sediments, which range in age from Jurassic to the present, range in thickness from less than a meter near the inner edge of the region to more than 12,000 m in southern Louisiana. The greatest thicknesses are along the seaward edge of the region and along the axis of the Mississippi embayment. The sediments were deposited on floodplains and as deltas where streams reached the coast and, during different invasions of the region by the sea, were reworked by waves and ocean currents. Thus, the sediments are complexly interbedded to the extent that most of the named geologic units into which they have been divided contain layers of the different types of sediment that underlie the region. These named geologic units (or formations) dip toward the coast or toward the axis of the Mississippi embayment, with the result that those that crop out at the surface form a series of bands roughly parallel to the coast or to the axis of the embayment. The oldest formations crop out along the inner margin of the region, and the youngest crop out in the coastal area.

Within any formation the coarsest grained materials (sand, at places interbedded with thin gravel layers) tend to be most abundant near source areas. Clay and silt layers become thicker and more numerous downdip.

## 11. SOUTHEAST COASTAL PLAIN GROUND-WATER REGION



- |     |  |
|-----|--|
| 11A | Solution Limestone and Shallow Surficial<br>Aquifers |
| 11B | Coastal Deposits                                     |
| 11C | Swamp  |
| 11D | Beaches & Bars                                       |

## 11. SOUTHEAST COASTAL PLAIN

(Thick layers of sand and clay over semi-consolidated carbonate rocks)

The Southeast Coastal Plain is an area of about 212,000 km<sup>2</sup> in Alabama, Florida, Georgia, and South Carolina. It is a relatively flat, low-lying area in which altitudes range from sea level at the coast to about 100 m down the center of the Florida peninsula and as much as 200 m on hills in Georgia near the interior boundary of the region. Much of the area, including the Everglades in southern Florida, is a nearly flat plain less than 10 m above sea level.

The land surface of the Southeast Coastal Plain is underlain by unconsolidated deposits of Pleistocene age consisting of sand, gravel, clay, and shell beds and, in southeastern Florida, by semiconsolidated limestone. From the coast up to altitudes of nearly 100 m, the surficial deposits are associated with marine terraces formed when the Coastal Plain was inundated at different times by the sea. In most of the region the surficial deposits rest on formations, primarily of middle to late Miocene age, composed of interbedded clay, sand, and limestone. The most extensive Miocene deposit is the Hawthorn Formation. The formations of middle to late Miocene age and, where those formations are absent, the surficial deposits overlie semiconsolidated limestones and dolomites that are as much as 1,500 m thick. These carbonate rocks range in age from early Miocene to Paleocene and are generally referred to collectively as Tertiary limestones.

The Tertiary limestone that underlies the Southeast Coastal Plain constitutes one of the most productive aquifers in the United States and is the feature that justifies treatment of the region separately from the remainder of the Atlantic and Gulf Coastal Plain. The aquifer, which is known as the Floridan aquifer, underlies all of Florida and southeast Georgia and small areas in Alabama and South Carolina. The Floridan aquifer consists of layers several meters thick composed largely of loose aggregations of shells of foraminifers and fragments of echinoids and other marine organisms interbedded with much thinner layers of cemented and cherty limestone. The Floridan, one of the most productive aquifers in the world, is the principal source of ground-water supplies in the southeast Coastal Plain region.

In southern Florida, south of Lake Okeechobee, and in a belt about 30 km wide northward along the east coast of Florida to the vicinity of St. Augustine, the water in the Floridan aquifer contains more than 100 mg/l of chloride. In this area, most water supplies are obtained from surficial aquifers, the most notable of which underlies the southeastern part of Florida and which in the Miami area consists of 30 to 100 m of cavernous limestone and

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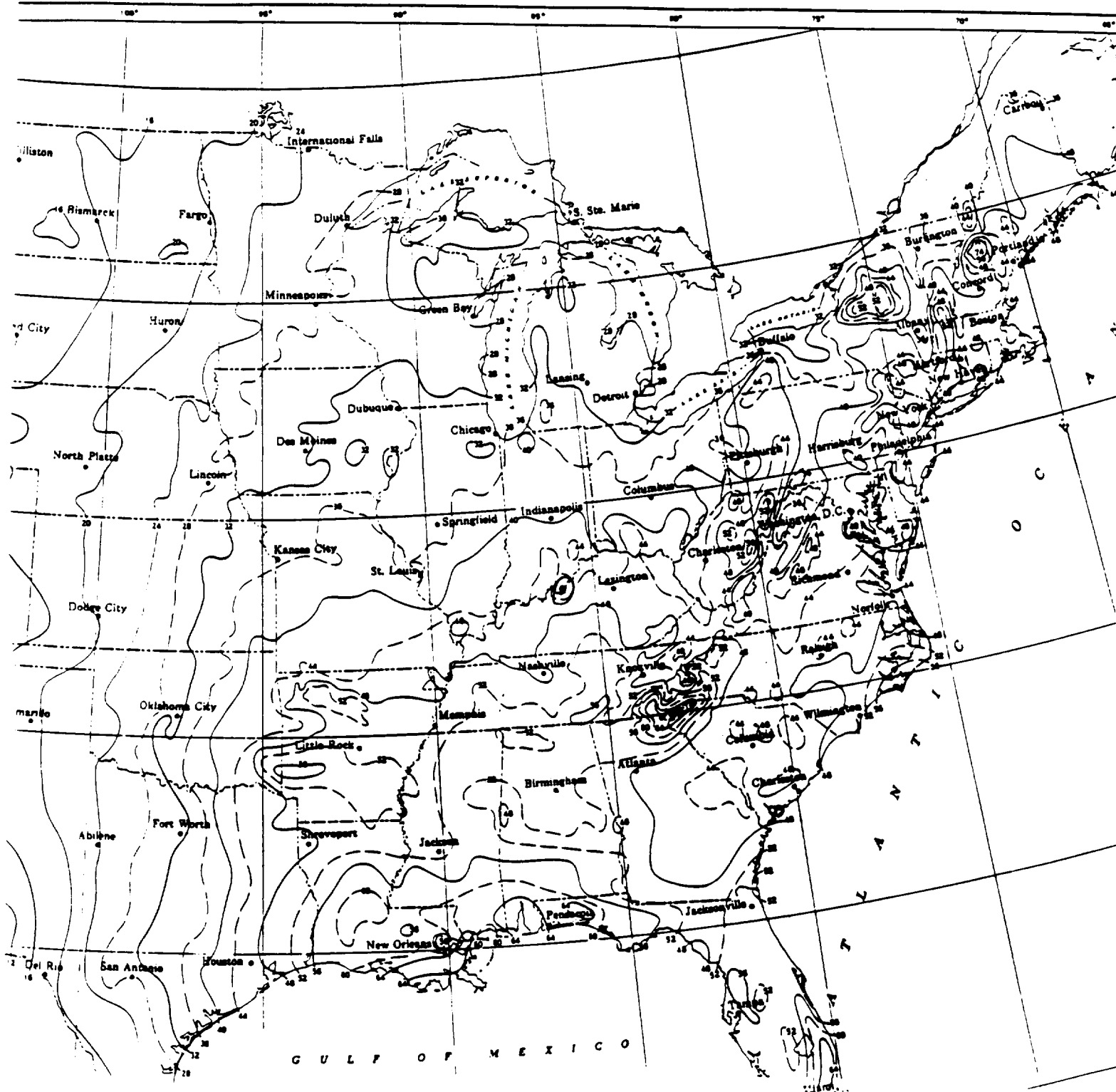


# CLIMATIC ATLAS OF THE UNITED STATES

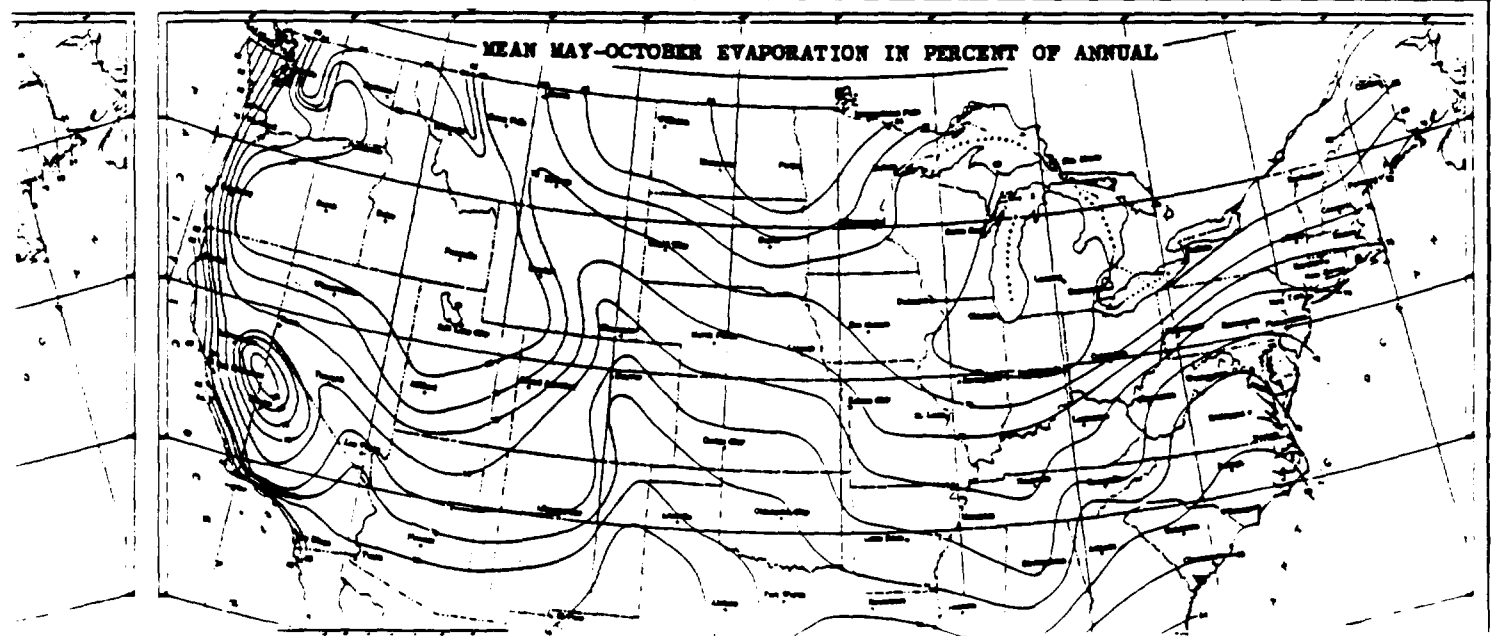
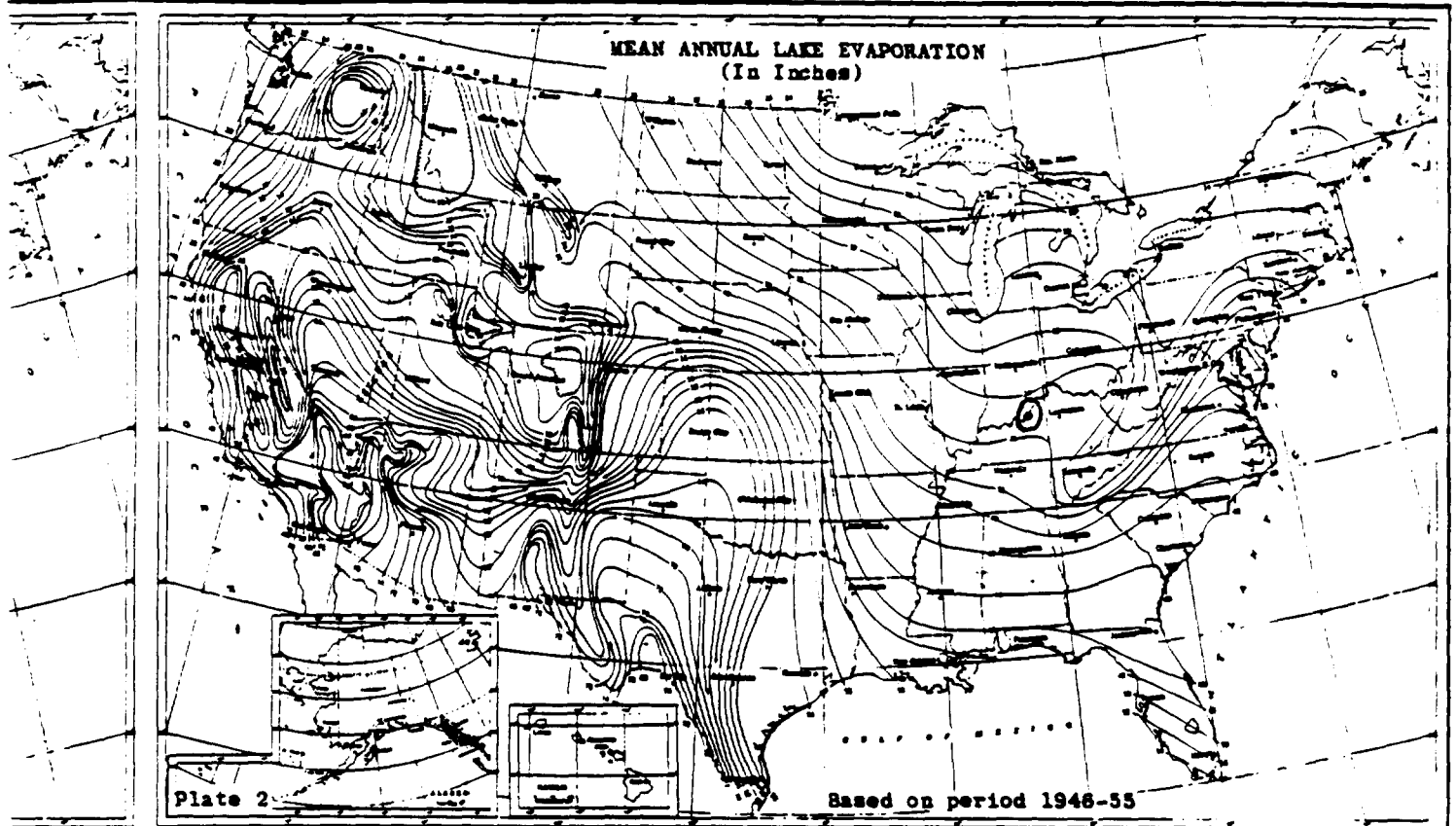
Environmental Science Services Administration . Environmental



# JULY ANNUAL TOTAL PRECIPITATION (Inches)



## N AND LAKE EVAPORATION



TECHNICAL PAPER NO. 40

RAINFALL FREQUENCY ATLAS OF THE UNITED STATES

for Durations from 30 Minutes to 24 Hours and  
Return Periods from 1 to 100 Years

Prepared by  
DAVID M. HENSHFIELD  
Cooperative Studies Section, Hydrologic Services Division  
for  
Engineering Division, Soil Conservation Service  
U. S. Department of Agriculture

REFERENCE # 18



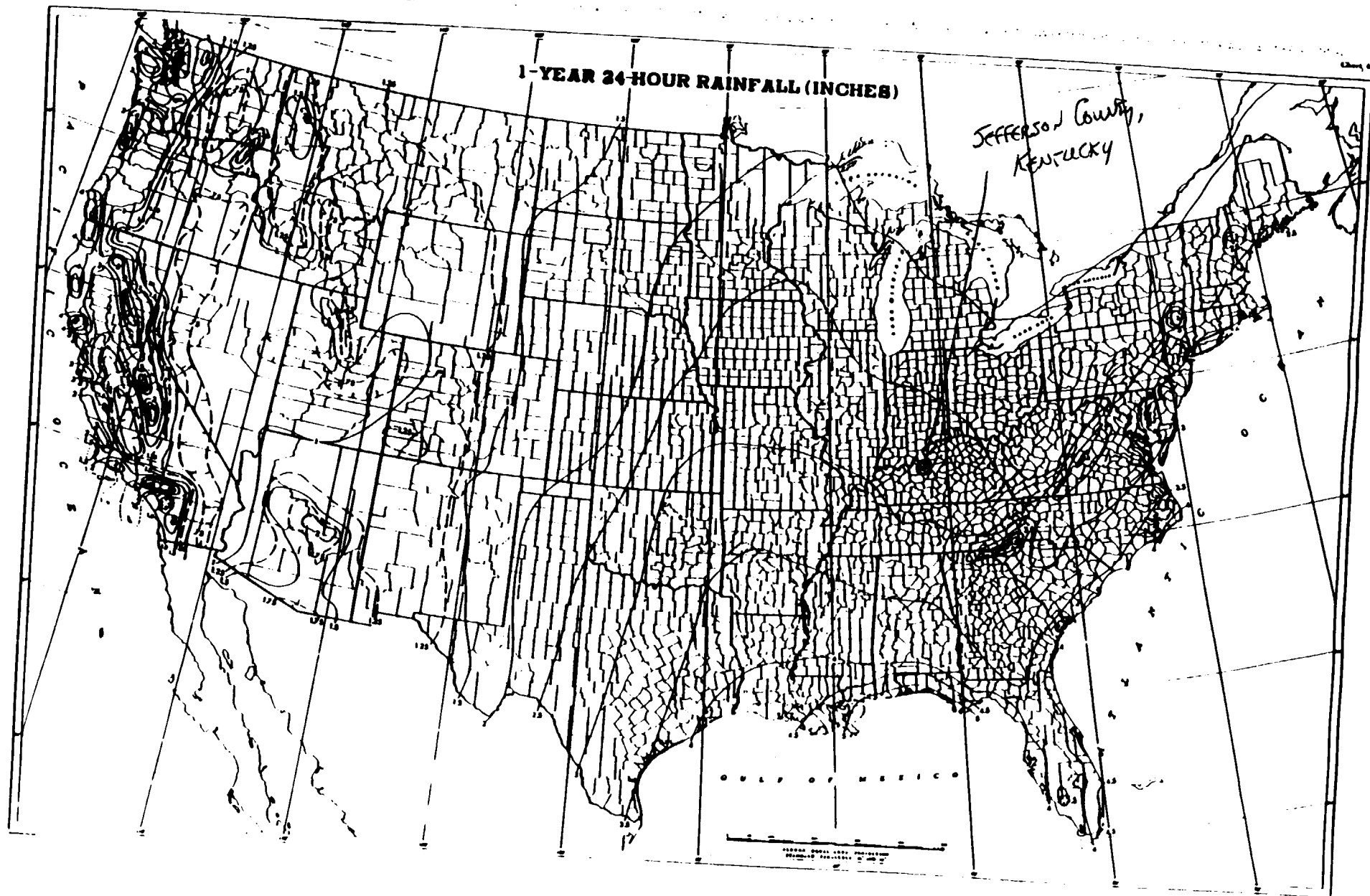
PROPERTY OF EPA  
FIT IV

1-YEAR 24-HOUR RAINFALL (INCHES)

Jefferson County,  
Kentucky

GULF OF MEXICO

ASSEMBLED BY THE U.S. DEPARTMENT OF AGRICULTURE  
FROM THE RECORDS OF THE U.S. WEATHER BUREAU



# Summary of Hydrologic Conditions of the Louisville Area Kentucky

By EDWIN A. BELL

CONTRIBUTIONS TO THE HYDROLOGY OF THE UNITED STATES

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GEOLOGICAL SURVEY WATER-SUPPLY PAPER 1819-C

*Prepared in cooperation with the  
Commonwealth of Kentucky and the  
University of Kentucky, Kentucky  
Geological Survey*



REFERENCE # 19

UNITED STATES DEPARTMENT OF THE INTERIOR

STEWART L. UDALL, *Secretary*

GEOLOGICAL SURVEY

William T. Pecora, *Director*

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# ILLUSTRATIONS

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2-5. Maps showing—

2. Thickness of saturated sand and gravel beneath the flood plain, December 1962, and degree of hydraulic connection between the river and aquifer.

3. Water-level contours beneath the flood plain of the Ohio River, December 1962.

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## CONTRIBUTIONS TO THE HYDROLOGY OF THE UNITED STATES

### SUMMARY OF HYDROLOGIC CONDITIONS OF THE LOUISVILLE AREA, KENTUCKY

By EDWIN A. BELL

#### ABSTRACT

Water problems and their solution have been associated with the growth and development of the Louisville area for more than a century. Many hydrologic data that aided water users in the past can be applied to present water problems and will be helpful for solving many similar problems in the future. Most of the water problems of Louisville, a water-rich area, concern management and are associated with the distribution of supplies, the quality of water, drainage, and waste disposal.

The local hydrologic system at Louisville is dominated by the Ohio River and the glacial-outwash deposits beneath its flood plain. The water-bearing limestones in the uplands are secondary sources of water. The average flow of the Ohio River at Louisville, 73 billion gallons per day, and the potential availability of 370 million gallons per day of ground water suitable for industrial cooling purposes minimize the chance of acute water shortage in the area. Under current development, use of water averages about 211 million gallons per day, excluding about 392 million gallons of Ohio River water circulated daily through steampower plants and returned directly to the river. Optimum use and control of the water resources will be dependent on solving several water problems.

The principal sources of water are in the Ohio River bottom land, whereas the new and potential centers of use are in the uplands. Either water must be piped to these new centers from the present sources or new supplies must be developed. Available data on streamflow and ground water are adequate to plan for the development of small local supplies.

Since the completion of floodwalls and levees in 1953, widespread damage from flooding is a thing of the past in the Louisville area. Some local flooding of unprotected areas and of lowlands along tributary streams still takes place. The analyses of streamflow data are useful in planning for protection of these areas, but additional streamflow records and flood-area mapping are needed to best solve the problem. Droughts are a problem only to users of small water supplies in the uplands, where additional water either can be imported or developed locally.

Pollution and undesirable chemical quality of water for some uses are the most serious drawbacks to the optimum development of the water resources in Louisville and Jefferson County. Available chemical analyses of ground water

are useful for determining its suitability for various uses, but additional data are needed to guide management decisions. Sources of contamination should be inventoried and water samples analyzed periodically to monitor changes in quality.

### PURPOSE AND SCOPE

This report describes the hydrologic system and its operation, identifies Louisville's water problems, and shows how the analysis and interpretation of basic water-resource data are applied to water problems. Special emphasis is given to ground-water problems and to summarizing data that are useful to water managers in developing and utilizing ground-water supplies in the area.

Geologic investigations in the area provided data to describe the natural environment in which the hydrologic cycle operates. Hydrologic and hydraulic studies resulted in knowledge of the occurrence and movement of water within the area. The types of basic data include determinations of physical and hydrologic characteristics of soil and rock, determinations of streamflows and ground-water levels, determinations of temperature, and the physical and chemical properties of waters. Correlations of the basic data with natural phenomena, such as precipitation, and with changes in the environment imposed by man delineate the water regimen and relate the hydrologic system to the development and conservation of Louisville's water resources.

### RESULTS OF INVESTIGATIONS

Most of the data collected and analyzed during investigations of ground-water resources in the Louisville area since 1943 are incorporated in Geological Survey reports resulting from those investigations. Before the 1950's, the reports were generally released to open file and duplicated in limited quantities. A tropical summary of basic ground-water information is given in table 1.

### COOPERATION AND ACKNOWLEDGMENTS

The U.S. Geological Survey in cooperation with city, county, State, or Federal agencies, and currently in cooperation with the Kentucky Geological Survey, has been active in water-resources investigations in the Louisville area since 1938. Intensive studies of ground-water resources in the area began in 1943 in cooperation with the Geological Division, Kentucky State Department of Mines and Minerals (now the Kentucky Geological Survey, a research and service department of the University of Kentucky), and with the city of Louisville. The studies were continued in cooperation with Jefferson County, the Rubber Reserve Company (a wartime agency of the Federal

TABLE 1.—Classification of references by topic

Reference	Bell (1932)	Bell and others (1933)	Guy-ton and others (1944)	Hamilton (1944)	MacCary (1955)	MacCary (1956)	Price (1964a)	Price (1964b)	Rora-baugh (1965a)	Rora-baugh (1965b)	Rora-baugh and others (1965)	Sublett (1945)	USGS (1944)	USGS (1945)	USGS (1944-55)	White-sides and Nichols (1961)
Aquifer characteristics																
Area of pumping	x															
Artificial recharge																
Availability of water	x															
Bedrock																
Chemical analyses																
Geologic structure																
Glacial deposits																
Ground-water potential																
Induced infiltration from																
Mineral constituents of water																
Movement of water																
Natural discharge																
Natural recharge																
Occurrence of water																
Physical character of water																
Physiography																
Precipitation																
Pumping tests																
Soil and rock characteristics																
Stratigraphy																
Temperature of water																
Test drilling																
Water in storage																
Water levels																
Water use																
Well characteristics																
Well logs																
Well-numbering system																
Well records																

U.S. Geol. Survey Water-Supply Papers 1017, 1024, 1072, 1097, 1127, 1157, 1166, 1192, 1222, 1266, 1322, 1405, and 1538. (See list of references, p. C34.)



Government), the city of Louisville, and the Economic Development Board of Kentucky (formerly the Agricultural and Industrial Development Board) and are currently in cooperation with the Kentucky Geological Survey.

Most of the data used in this report were collected by the U.S. Geological Survey during the period 1943-62. However, much information was furnished by other Federal agencies, State, county, and city officials, well drillers, industrial managers, and many individuals too numerous to list, who also permitted the Survey to make observations and to collect data at many installations.

### WELL-NUMBERING SYSTEM

The Louisville area lies between long.  $85^{\circ}$  and  $86^{\circ}$  W. and lat.  $38^{\circ}$  and  $39^{\circ}$  N. and has been subdivided into quadrangles by a grid of 1-minute meridians of longitude and 1-minute parallels of latitude. The wells in each of the quadrangles are numbered in the order inventoried. A well is designated by a composite of three numbers: the first, indicates the minutes of longitude; the second, the minutes of latitude; and the third, the number of the well in that quadrangle. Thus, well 43-15-1 is the first well inventoried in the 1-minute quadrangle west of long.  $85^{\circ}43'$  W. and north of lat.  $38^{\circ}15'$  N.

### DESCRIPTION OF THE AREA

The Louisville area, as described in this report, includes all Jefferson County (fig. 1) an area of 394 square miles in the north-central part of the State. It is in the drainage basin of the Ohio River, which forms the west boundary of the area. The climate is mild and humid, and extreme conditions seldom prevail for long periods. The Population Committee of the Louisville Chamber of Commerce estimated that the present (1963) population of 650,000 is expected to increase to about 745,000 by 1970. Industrial and commercial enterprises are the basis of a stable economy. Farming, principally in the eastern part of the county, is less significant in the general economy of the area. Adjustments after World War II included an expansion of industry and a shift of the increasing population from city to outlying areas.

### THE HYDROLOGIC SYSTEM

The dominant feature of the hydrologic system in the Louisville area is the Ohio River and its flood plain underlain by about 100 feet of permeable sand and gravel deposits. At Louisville the river carries the drainage from an area of 91 170 square miles. The river fur-

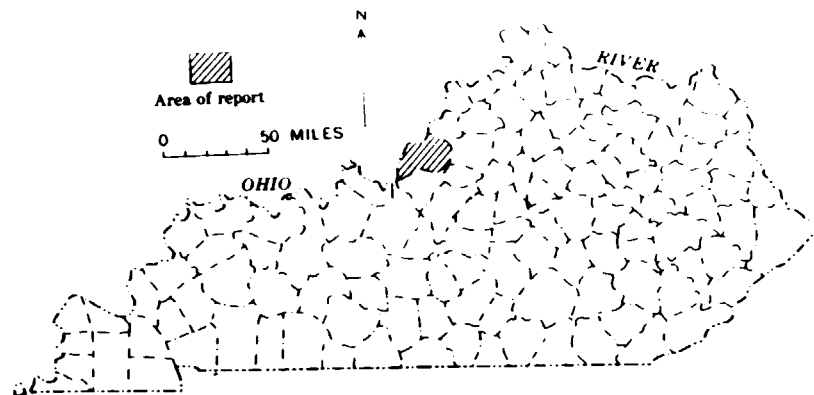


FIGURE 1.—Area covered by this report.

nishes water suitable for all local uses, provides a navigation avenue for 80 million tons of freight annually (1959-61), and provides recreational areas. The average discharge of the river at Louisville is so large—113,900 cfs (cubic feet per second), or more than 73 billion gallons per day—that a water shortage seems inconceivable. Despite the abundance of water, its chemical and biological quality is affected by contamination from untreated domestic sewage and industrial wastes discharged into the river upstream from Louisville.

The smaller streams in the Louisville area, which all flow directly or indirectly into the Ohio River, are relatively unimportant as sources of water because their flows in dry years become very low or cease entirely.

The part of local precipitation that does not become surface runoff or is not evaporated enters the ground and replenishes soil moisture or seeps further downward to the zone of saturation and recharges the ground-water reservoirs. Ground water in the area is discharged through wells and springs or moves generally westward and north-westward where it seeps into the river or leaves the area as subsurface underflow. Figure 2 is a generalized diagram showing the occurrence and direction of movement of waters in the Louisville area.

### GEOLOGIC FRAMEWORK

The geologic framework that controls the availability of water in the Louisville area is illustrated by the block diagram (pl. 1). The upland areas are underlain by shale and limestone of Silurian, Devonian, and Mississippian ages. These rocks dip to the southwest at about 40 feet per mile. The present valley of the Ohio River along the western and northwestern part of the area was cut into the shale and

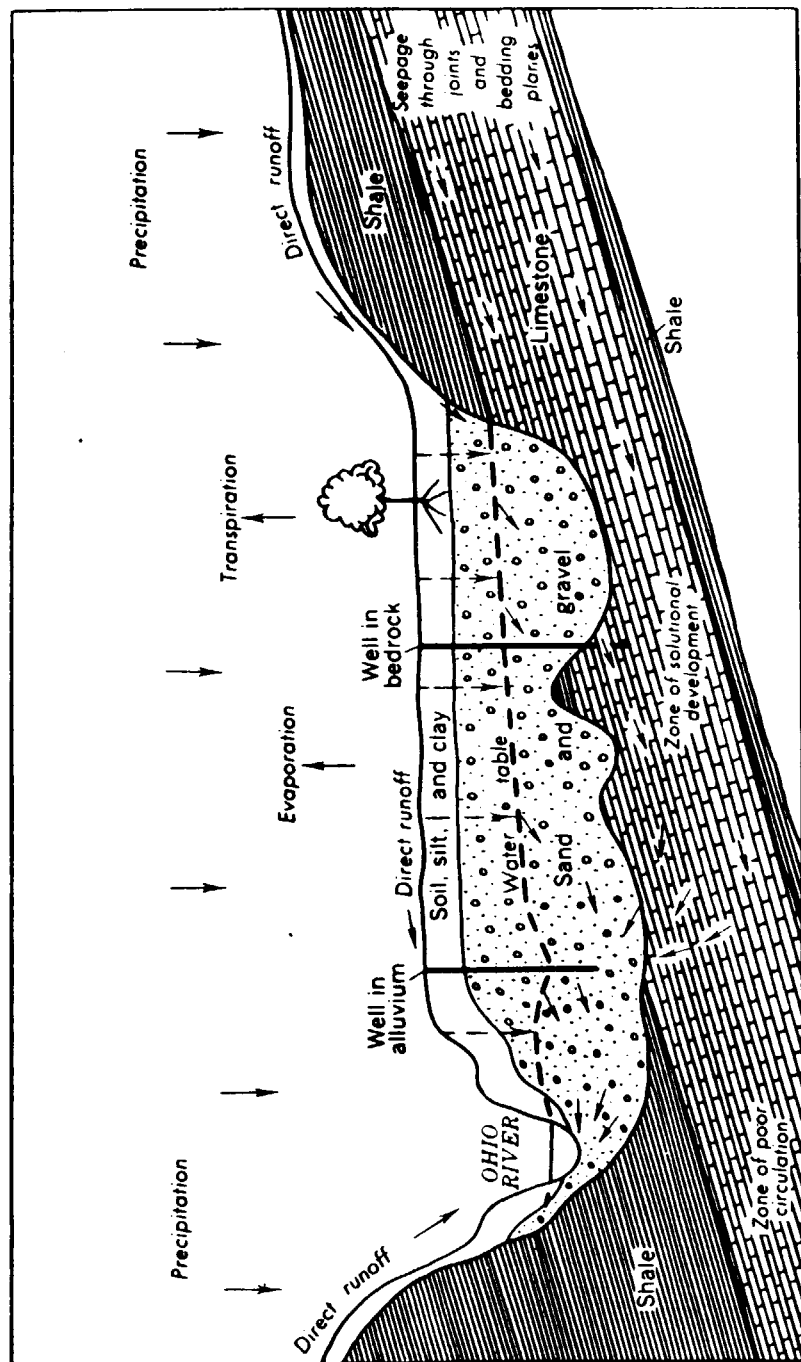


FIGURE 2.—Hydrologic cycle in the Louisville area, Kentucky.

limestone during glacial times. The rock valley is filled with alluvium of Quarternary age which underlies the Ohio River flood plain to a maximum depth of 130 feet. (In this report, the Ohio River flood plain is defined as the entire surface area of the alluvium filling the rock valley.) The alluvium consists of glacial outwash, sand, and gravel and a blanket of Recent silt and clay, and is connected hydraulically with the Ohio River along much of its course in the area.

The glacial deposit of sand and gravel in the flood plain has a vast water-storage capacity and high transmissibility and is the principal aquifer in the Louisville area. The limestone provides a secondary aquifer, particularly where solution openings occur along extensive joint systems and well-formed bedding planes. Limestone in the central part of Jefferson County yields water to many domestic wells, and the limestone bedrock beneath the glacial sand and gravel in the city yields large quantities of water to industrial wells.

The clay and shale are not significant as aquifers but are important because they influence the flow of water to and from other formations.

Formations of Ordovician and Silurian ages are exposed in the eastern third of the county. Formations of Mississippian age comprise the bedrock of the Knobs area in the southwestern part of the county. These formations, however, are not of hydrologic importance locally and are not defined in the local hydrologic system.

#### HYDROLOGY

The Louisville area is at times affected by cold airmasses from the northwest and Great Lakes area, by the warmer air sweeping up the Mississippi and Ohio Valleys from the Gulf region, and by the meeting of these two opposing airmasses. The resulting variation in precipitation affects the local hydrologic system.

The normal annual precipitation at Standiford Airport (U.S. Weather Bur. records) for the period 1931-60 is 41.32 inches. (See fig. 3.) If it is assumed that this amount is the average throughout the Louisville area and that losses to evaporation and transpiration are about 60 percent of the precipitation, an average of nearly one-third of a billion gallons is added daily to the amount of water that moves through the area, either on or in the ground. This is less than one-half of 1 percent of the average amount of water that the Ohio River brings in from outside the area each day.

In the eastern third of Jefferson County and in the Knobs area south of Louisville, topographic highs and lows are pronounced, and much of the precipitation leaves the area rapidly as overland runoff to local streams. Only a small amount of water seeps below the soil mantle

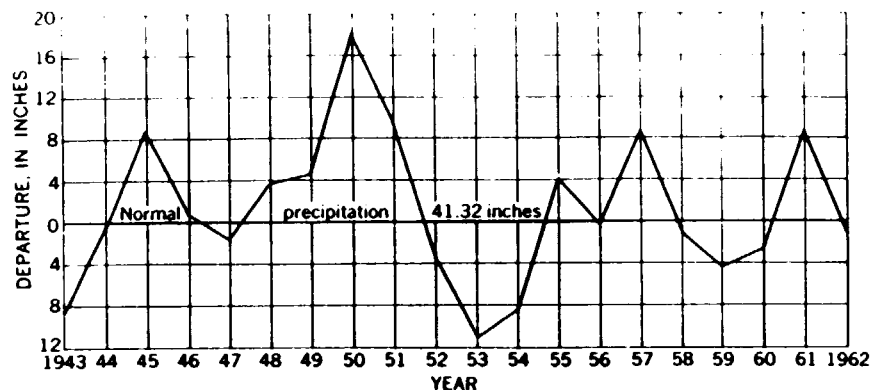


FIGURE 3.—Departure from normal precipitation at U.S. Weather Bureau station, Louisville, Ky., 1943-62. Normal precipitation determined by U.S. Weather Bureau, based on period 1931-60.

to the underlying limestone. In the central part of the county, and extending to the Ohio River valley, the relief is relatively flat, the runoff is generally slower, and recharge to ground-water storage in the underlying limestone is substantially higher. Ground-water flow is generally toward the Ohio River valley except in the extreme eastern part of the county where the flow is toward the south.

In the flood plain the many buildings and great amount of pavement limit the area in which water can enter the ground; also, the low permeability of a silt-and-clay blanket impedes downward seepage of water into the more permeable sand and gravel. Consequently, direct recharge of the alluvial aquifer by precipitation is decreased. Infiltration from the Ohio River in the northeastern part of Louisville and flow through the rock valley wall are major contributors of water to the sand and gravel. The deposit of sand and gravel with its vast storage of water, estimated to be nearly 100 billion gallons (Bell, 1962), supplies many industrial wells in the area and is the source of water for the Louisville Extension Water District in the southwestern part of the county.

Water in the area is predominantly of calcium magnesium bicarbonate type and contains appreciable concentrations of sulfate. Ground water is generally harder than surface water and contains more dissolved solids.

#### RELATION OF HYDROLOGIC SYSTEM TO WATER UTILIZATION

The Louisville area has an abundant water supply: Its optimum use is controlled primarily by the (1) variation of precipitation (seasonal and local), (2) hydrologic character of soil and rock, and (3) dynamics of fluid flow.

Seasonal and local variations in precipitation directly affect availability of water outside the flood plain. During dry summers most of the small streams and many wells finished in the limestone become dry, making it necessary for users to store water or to import it. Seasonal variation is also noted in the flood plain, but it is small compared with the total amount of water available, and no critical shortage occurs there.

The porosity of soil and rock determines how water might be absorbed and accumulated in the ground. The permeability, or water-transmitting capacity, determines the quantity of water that will move through the rocks and can be utilized. An abundance of ground water is available in the porous and permeable sand and gravel deposits in the Ohio River flood plain. Only small amounts of ground water are available from the less permeable limestone of the uplands.

Water on the surface and in the ground moves down a hydraulic gradient. Water on the surface, unless stored in the area of use, runs away rather quickly to the Ohio River and its flood plain. Mechanical energy must then be provided to move the water to the area of use. Downgradient movement of water through cracks in limestone and pore spaces in the sand and gravel, however, is slower, and the water is held in storage for longer periods of time. Thus storage is provided naturally, and the water is available in the area where it is to be used. Industrial pumping of water at high rates from the alluvium in parts of the Louisville area has altered the hydraulic gradients which influence the direction of flow and locally limit the utilization of ground-water supplies.

The chief adverse effect of water use on the local hydrologic system is pollution. Because the Louisville area obtains most of its water from the Ohio River, its problems of chemical and biological pollution originate in upstream areas. Therefore, extensive treatment of water is required to control the quality for domestic and industrial uses.

#### THE AVAILABLE WATER SUPPLY

The large quantity of water that flows in the Ohio River and moves through the alluvial sand-and-gravel deposit in the Ohio River flood plain at Louisville is the major source for development in the area. The availability of adequate public and industrial water supplies contributes much to Louisville's economic growth and to the welfare of its population. Sources of smaller supplies are the tributary streams (mainly Beargrass Creek, Floyds Fork, Harrods Creek, and Pond Creek) which drain the various parts of the county and the ground water contained in the bedrock of the uplands.

## THE OHIO RIVER

The Ohio River has provided the municipal water supply for more than a century, and it provides most of the water for all other uses including industrial supplies, fire protection, irrigation, navigation, hydroelectric power, recreation, and dilution of wastes. It also carries away local surface drainage and supports fish and wildlife. But in contrast to the many benefits it provides, the Ohio River has been a relentless force of destruction during severe flooding.

## DISCHARGE

Although the average flow of the Ohio River at Louisville (114,000 cfs, or 73 billion gallons per day) equals more than half the average flow over Niagara Falls, it cannot be used to provide a basis for determining water-supply availability. Evaluations must be based primarily on data showing the magnitude and frequency of minimum flows and to some extent on duration-of-flow data.

The duration curve of flow (fig. 4) shows the percentage of time that the daily flow of the Ohio River at Louisville exceeds various values. The shape of the curve is indicative of the flow characteristics of the drainage basin. The graph (fig. 4) shows that the discharge equaled or exceeded 3.88 billion gallons per day 99 percent of the time during the period 1928-62 and that the discharge equaled or exceeded 73 billion gallons per day (the average flow) about 37 percent of the time. The minimum daily flow was less than 3.88 billion gallons per day at an average interval of 2.7 years (fig. 5).

The low-flow frequency curves shown on figure 5 were derived from the daily flow records at Louisville for the period 1928-62.

These curves represent the average of plotted points computed from the lowest mean flows for periods of 1 day, 7 days, and 30 consecutive days in each year of record. The curves show the expected recurrence interval in years for the indicated minimum flows.

The low-flow frequency curves show that on the average of every 20 years the flow of the Ohio River at Louisville recedes so that the lowest mean flow for 30 consecutive days will be less than 7,000 cfs, for 7 consecutive days will be less than 5,500 cfs, and for 1 day will be less than 4,100 cfs.

The minimum flows shown for the year 1930 (30-day low flow, 4,320 cfs; 7-day low flow, 3,530 cfs; 1-day low flow, 2,100 cfs) are extremely low as compared to the frequency curves. An analysis of the plotting indicates that the 1930 drought was a very unusual occurrence and that the recurrence expectancy of minimum flows comparable to those in 1930 will be a long period of years, possibly many times the

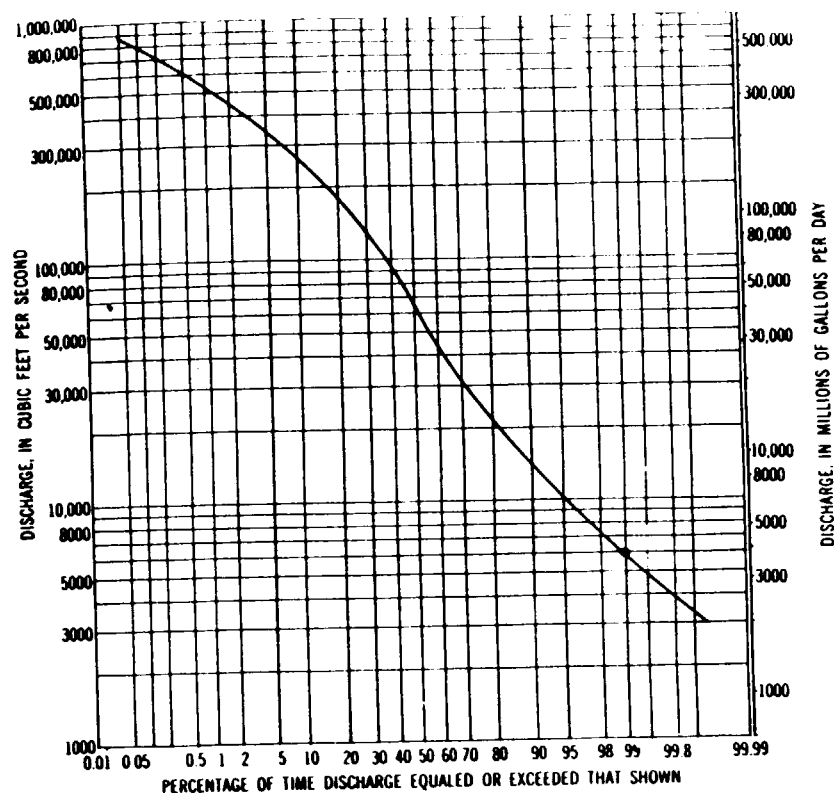


FIGURE 4.—Duration curve of daily flows, Ohio River at Louisville, Ky., 1928-62. Drainage area 91,170 square miles. Example: The daily flow at Louisville equaled or exceeded 6,000 cfs (3,878 mgd) 99 percent of the time during the period 1928-62.

In evaluating the potential water supply of the Ohio River at Louisville, it is noted that the Louisville Water Company reported an average daily pumpage of 135 cfs from the Ohio River in 1963 and a maximum daily pumpage of 195 cfs in 1962. Compared to the 20-year flow expectancy, the average daily pumpage for 1963 represents only 4 percent of the minimum daily flow expected and less than 3 percent of the 7-day minimum flow. The maximum daily pumpage of 195 cfs in 1962 represents only 5 percent of the 20-year minimum daily flow and less than 4 percent of the 20-year 7-day minimum flow. Even during the extreme drought of 1930 the maximum daily pumpage would have been only about 9 percent of the minimum daily flow and less than 6 percent of the 7-day minimum flow.

Another factor used in evaluating the future water-supply potential is the effect of releases from storage reservoirs

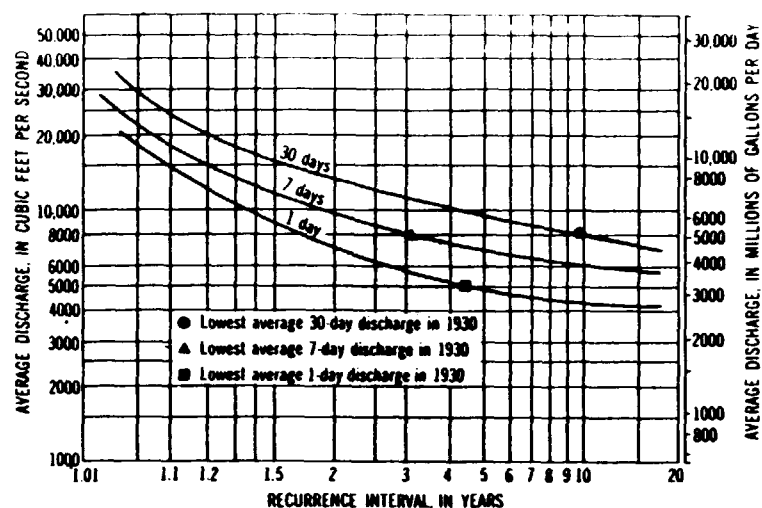


FIGURE 5.—Low-flow frequencies, Ohio River at Louisville, Ky., 1928–62. Drainage area 91,170 square miles. Examples: (1) The minimum daily flow at Louisville will be less than 5,000 cfs (3,232 mgd) at average interval of 4.5 years, (2) The minimum 7-day flow will be less than 8,000 cfs (5,170 mgd) at average interval of 3.2 years, (3) The minimum 30-day flow will be less than 8,000 cfs (5,170 mgd) at average interval of 9.7 years.

upstream from Louisville in the four-State area of Pennsylvania, Ohio, West Virginia, and Kentucky. It has been estimated that the reservoirs on tributary streams in those States, including those reservoirs completed in recent years, would augment Ohio River flows at Louisville by as much as 50 percent during minor droughts and that, on recurrence of an extreme drought similar to that in the 1930's, releases from the reservoirs would double the minimum flows at Louisville.

#### CHEMICAL QUALITY AND POLLUTION

The water in the Ohio River under natural conditions would be slightly hard and of the calcium bicarbonate or calcium magnesium bicarbonate type. However, because of pollution by industrial and domestic wastes, the concentrations of sodium, sulfate, chloride, fluoride, nitrate, and the hardness are increased and the basic character of the water is changed. In addition, oils, toxic substances, and taste- and odor-producing compounds are discharged into the river from various sources. Also, there is considerable variation in the chemical quality owing to changes in riverflow and in the amounts of the pollutants entering the stream. As a result, treatment is required to make the water suitable for human consumption and for some indus-

trial uses. The amount of treatment necessary varies seasonally with the variation in riverflow and locally with the change in the volume of waste entering the stream.

In 1961 the water of the Ohio River had an average hardness of 137 ppm (parts per million), as reported by the Ohio River Valley Water Sanitation Commission (ORSANCO). The hardness ranged from 93 to 197 ppm. Total dissolved solids ranged from 150 to 334 ppm and averaged 214 ppm. The total dissolved solids were well below the 500-ppm limit recommended by the U.S. Public Health Service (1962) in a year when riverflows were above normal.

There is also considerable variation in bacterial pollution. During 1961 ORSANCO reported that coliform bacteria ranged from 1,100 to 13,000 (most probable number per 100 ml). In relation to previous years this range is low and is the result of the river cleanup by ORSANCO and of dilution by the above-normal riverflow in 1961.

The quality of the water in the Ohio River at Louisville in 1961, as reported by ORSANCO, is summarized in the following table.

Constituent	Concentration (ppm)		
	Maximum	Minimum	Average
Silica (SiO <sub>2</sub> )	7.0	2.4	5.6
Iron (Fe)	2.2	.2	.8
Calcium (Ca)	56	28	39
Magnesium (Mg)	15	7.6	10
Sodium (Na)	31	6.3	15
Potassium (K)	3.2	.9	2.1
Sulfate (SO <sub>4</sub> )	131	38	74
Chloride (Cl)	59	8.0	24
Fluoride (F)	.4	.1	.2
Nitrate (NO <sub>3</sub> )	6.0	2.0	4.0
Dissolved solids (total)	334	150	214
Total hardness (as CaCO <sub>3</sub> )	197	93	137
Alkalinity (as CaCO <sub>3</sub> )	107	49	74
Specific conductance.....micromhos at 25°C	543	243	351
pH	8.8	6.7	—
Temperature.....°F	81	35	60

#### SMALL STREAMS

An average of about 15 inches of the annual precipitation (Rorabaugh and others, 1953, p. 6) in the Louisville area becomes runoff. The total drainage, averaging more than 0.2 billion gallons per day, is carried to the Ohio and Salt Rivers by tributary streams, principally Floyds Fork in eastern Jefferson County, Harrods Creek and Beargrass Creek in the north-central part of the area, and Pond Creek in the southern and western parts of the county. These streams provide recreational areas and furnish some water for stock and for

irrigation, but their flows are not adequate for dependable supplies. During the late summer and fall, the flow of these streams usually recedes to a very low quantity, sometimes going dry for periods of a few days to several weeks. In recent years, however, the flow of Pond Creek has been augmented by inflow diverted by manufacturing plants from the Louisville public water supply.

Ponds for stock are necessary on most farmlands in Jefferson County. As more land is developed for housing, the stock ponds are gradually disappearing and are becoming less important in the general water regimen. In contrast, artificial lakes formed by stream impoundments are becoming more important as recreational areas for fishing and water sports.

#### GROUND WATER IN ALLUVIUM

The occurrence and availability of water in the Louisville area are described by Rorabaugh and others (1953), by MacCary (1956), and by Bell and others (1963).

The alluvium in the Ohio River flood plain is the second most important source of water. It comprises outwash sand and gravel of Pleistocene age ranging from 0 to 100 feet in thickness, overlain by a blanket of silt and clay as much as 40 feet thick. Very thin deposits of clay and silt of Recent age cover parts of the flood plain. The permeability of the top clay and silt is low and impedes vertical seepage of water from the surface. Nevertheless, the glacial deposit of sand and gravel is a good, permeable water-bearing formation, and the entire thickness is considered a single hydrologic unit. The thickness of the saturated sand and gravel varies considerably (pl. 2) because of the shape of the underlying bedrock surface and because of the lowered water table in heavily pumped areas (pl. 3).

The alluvium northeast of downtown Louisville between the Ohio River and the rock bluffs is mostly saturated. Along the reach northeast of Zorn Avenue, the alluvium ranges in thickness from about 120 feet near Goose Creek to about 90 feet at Zorn Avenue and averages about 100 feet in thickness (pl. 2). The water in the alluvium along the reach is connected hydraulically with the river, and changes in the river stage are reflected rapidly by corresponding changes in ground-water storage.

Southwest of Zorn Avenue the hydraulic gradient generally slopes toward downtown Louisville where water levels have been lowered by pumping for air conditioning (pl. 3). From downtown Louisville the gradient steepens progressively toward the heavily pumped industrial center southwest of the city. The average thickness of the alluvium within the city limits is greater than in the reach along the

river northeast of Zorn Avenue, but the thickness of saturated sand and gravel is less because of the lowered water table.

Southwest of downtown Louisville ground water flows northwestward toward the heavily pumped industrial center and westward toward the Ohio River. A large quantity of ground water is available, but the thickness of saturated sand and gravel varies considerably because of several domes in the underlying bedrock.

Southward from Bells Lane to Lees Lane the gradient is from the river toward heavily pumped centers where the water level has been drawn down below river level. South of Lees Lane the gradient is toward the river, except during floods. Although the potential is not so great as that northeast of the city, much infiltration can be induced from the river along its reach south of Lees Lane.

Bell (1962, p. 17) estimated that the maximum supply that could be developed in the alluvial aquifer of the flood plain in the Louisville area without depletion of storage is about 370 mgd (million gallons per day). However, to attain that supply, maximum infiltration from the Ohio River would have to be induced. This would require infiltration galleries or high-capacity wells virtually along the entire reach of the river where it is connected hydraulically with the aquifers.

The river is connected hydraulically with the alluvial aquifer, in varying degrees of effectiveness, along most of its distance within the Louisville area (pl. 2). The most effective connection—and hence the greatest potential infiltration that could be induced from the river—is along the reach northeast of Zorn Avenue. The hydraulic connection between the river and aquifer becomes progressively less effective downstream toward McAlpine Dam because of clay barriers. In the northwestern part between McAlpine Dam and Bells Lane, except in a small area of low permeability opposite Sand Island, the connection is poor. The infiltration potential is large southward from Bells Lane.

A large amount of water stored in the alluvium underlying the Ohio River flood plain is a reserve ground-water supply that could be drawn in emergencies. Bell (1962, p. 22) estimated that nearly 100 billion gallons are stored in the alluvium within the Ohio River flood plain of the Louisville area.

#### NATURAL RECHARGE TO THE ALLUVIUM

Natural recharge, which is nature's way of maintaining or replenishing ground-water supplies, is derived from precipitation. Some rain falling in areas where permeable rock, chiefly limestone, crops out, fills the crevices and voids of the rock and flows by gravity from the limestone into the alluvium. Elsewhere, direct downward seepage of local rainfall through the permeable alluvium adds to the ground-

water storage. Natural recharge to the alluvium in the flood plain of the Louisville area, therefore, is partly by flow through the permeable rocks of the uplands adjacent to the deposits of sand and gravel and partly by direct downward seepage. Rorabaugh (1949b, p. 20) estimated that flow through the valley wall northeast of Beargrass Creek in 1946 was about 200,000 gpd (gallons per day) per mile of valley wall and southwest of Louisville in 1945 was about 100,000 gpd per mile of valley wall. The flow through the valley wall in the strip between Beargrass Creek and Shively should be as great or greater than in the other areas because of the predominance of limestone and the steeper hydraulic gradients toward the sand and gravel. Because of hydrostatic pressure some water moves upward from limestones underlying the alluvium, particularly in the west-central subarea.

The natural recharge by downward seepage to the alluvium is impeded by the considerable thickness of clay overlying the deposit of sand and gravel and is further minimized in the city because of buildings and pavings. Nevertheless, there are substantial amounts of recharge to the alluvium outside the built-up area. Accretion to the aquifer in the area southwest of Louisville was estimated by Rorabaugh (1949b, p. 21) as about 250,000 gpd per square mile in 1945, which was a wet year, but it would be much less in dry years. The changing use of land caused by urbanization in that part of the Louisville area has probably reduced the direct recharge from rainfall penetrating the flood plain. Supplementary recharge at times has resulted from an accumulation of runoff in large open pits that were excavated for various purposes.

#### INDUCED RECHARGE TO THE ALLUVIUM

In addition to the natural recharge to the area, a large amount of water can be induced by infiltration from the Ohio River. If high-capacity wells very near the river are pumped at high rates over a long period of time, the steep hydraulic gradient that is created will induce a large amount of water to flow through the banks and bed of the river. Rorabaugh (1956b, p. 159) estimated that about 280 mgd could be induced by infiltration from the river northeast of Zorn Avenue and (Rorabaugh, 1949b, p. 5) about 59 mgd from the reach south of Lees Lane.

#### NATURAL DISCHARGE FROM THE ALLUVIUM

All the recharge to the ground water in the alluvial area is not a net gain because water moves downgradient through the aquifer and is discharged through seeps along the banks of streams or joins the underflow through the aquifer out of the area. The normal hydraulic gradient of ground water between Zorn Avenue at the Ohio River corresponds to the difference of head in the river between the upper

and lower pools at Louisville. Most of the natural discharge from the alluvium is lost to the Ohio River south of Lees Lane. The loss in 1945 was estimated by Rorabaugh (1949b, p. 4) to be about 800,000 gpd per mile of river.

#### CHEMICAL QUALITY AND TEMPERATURE

Throughout the area the quality of the water in the alluvium varies depending on the nearness of the alluvium to sources of recharge or pollution. Water from alluvium is generally very hard, high in bicarbonate, and contains dissolved solids ranging from 250 to more than 1,500 ppm. The most highly mineralized water is in the central and west-central parts of Louisville where the alluvium is underlain by limestone. The median hardness of water from wells in deposits of sand and gravel overlying limestone bedrock sampled in 1952 was 642 ppm; from wells in sand and gravel overlying shale, 470 ppm (Rorabaugh and others, 1953, p. 37). Without softening, ground water from alluvium is not satisfactory for many purposes and is unacceptable for most industrial uses.

The chemical characteristics of water from wells finished in the alluvium and in the underlying bedrock are shown on plate 4 by polygons, called Stiff diagrams. The polygons are formed by plotting on four parallel horizontal axes the cations to the left and anions to the right of a vertical zero reference line. The concentrations for the cations calcium, magnesium, sodium, potassium,<sup>1</sup> and iron and for the anions bicarbonate, sulfate, chloride, and nitrate are expressed in equivalents per million. Lines connecting the plotted points form a polygon which represents the chemical character of the water. The polygons show that this water is predominately a calcium bicarbonate type containing substantial magnesium and sulfate. The sodium, potassium, and chlorides are present in lesser amounts. The iron and nitrate, though generally found in concentrations less than 0.1 epm (equivalents per million), are plotted because of their undesirable effect on water for certain uses.

In general, wells along the Ohio River yield water with less hardness and dissolved solids than those in the remainder of the area—a condition reflecting the effect of recharge by floodwater and river water induced by heavy pumping. Normally, the dilution effects of river-water infiltration diminish rapidly as the distance from the river increases. The effect is generally noticeable only within 400 or 500 feet of the river. However, it is more pronounced in the area between the river and the "Rubbertown" and downtown subareas.

Ground-water temperatures are fairly constant and approximate the average air temperature. In the Louisville area the ground-water

<sup>1</sup> Sodium and potassium are shown as one constituent.



temperature averages about 58° F except where it is affected by river infiltration, by seepage from leaky sewers, or by artificial recharge. The temperature of water from wells ranges from 47° to 66° F.

#### GROUND WATER IN BEDROCK

The water-bearing properties of the principal bedrock formations in the Louisville area were described by Hamilton (1944, p. 9), by Rorabaugh (1949b, p. 20), and in more detail by MacCary (1956, p. 3).

The Louisville Limestone of Silurian age and the Jeffersonville and Sellersburg Limestones of Devonian age are exposed in the northern, central, and south-central parts of Jefferson County. They also underlie the valley fill under the central part of the city and are exposed in the riverbed at the Falls of the Ohio River. These formations form a single aquifer of secondary importance that yields most of the water pumped from consolidated rocks. Water in this aquifer is contained in and moves along interconnected cracks and solution channels.

In the uplands the ability of the limestone to transmit water along joint systems, bedding planes, and solution openings is good, but its ability to retain or store water is low. The openings in the limestone are rapidly filled by downward seepage and lateral percolation. During wet seasons the limestone remains saturated, and large quantities of water are available. Between rains the limestone rapidly discharges water downgradient, and during droughts many of the solution channels at the higher altitudes are drained, causing shallow wells to become dry. However, many deep wells and springs at low altitudes in the uplands yield enough water for domestic use. The areal variation of available ground water is indicated by plate 5.

This same limestone underlies much of the alluvium in the central part of the city. There, the solution channels are probably developed more extensively than in the uplands. The limestone beneath the flood plain is hydraulically connected with the deposits of sand and gravel, from which a continuing source of recharge is available, and consequently greater yields are available from the bedrock. Further, river water may enter the limestone bedrock at the Falls of the Ohio and flow southwestward along numerous narrow openings to areas of pumping. The most extensive joint system trends N. 30° E.; the most productive wells in the limestone are in a well-defined belt that is parallel to the joint system and that traverses the northwestern part of the Louisville area (area 2, pl. 4). One rock well in this belt is

reported to have yielded 1,100 gpm (gallons per minute) for many years.

The water from the limestone bedrock is of the calcium bicarbonate type. It is generally very highly mineralized, but its mineral concentration varies greatly from place to place. The average hardness of water from 15 limestone wells beneath the alluvium of the Ohio River flood plain, sampled annually during the years 1944-52, is 580 ppm (Rorabaugh and others, p. 37). The hardness of the water from one of the wells sampled in 1953 was 1,140 ppm. The total dissolved solids in water from the limestone generally exceeded 1,200 ppm and in one well was 1,480 ppm. The concentration of calcium, bicarbonate, and sulfate is particularly high.

#### WATER-SUPPLY DEVELOPMENT

The development of water supplies in the Louisville area is directly related to the growth of the city. Since 1858 when the Louisville Water Company began pumping from the Ohio River for the public supply, developments have expanded to include several other river pumping stations for industrial uses and many wells for domestic and industrial uses.

The first extensive development of ground-water supplies was for air conditioning in downtown Louisville in the late 1930's. Development of ground-water supplies for industrial cooling, especially by manufacturers of chemicals and synthetic rubber, was greatest during the early 1940's. Most recently, the Louisville Extension Water District has developed a well field for public supply in the southwestern part of the county.

#### UTILIZATION OF WATER

Water in the Louisville area is used for public, commercial, and industrial supplies, for generation of electricity, and for irrigation and stock supply. It is withdrawn principally from the Ohio River and from the alluvium adjacent to the Ohio River (ground water). A small amount is withdrawn from small streams and ponds and from bedrock.

In 1962 water sources in the area furnished an average of 211.3 mgd of water for public and industrial uses. This excludes about 392 mgd of water which is diverted from the Ohio River for steam-generating plants and returned directly to the river, and a small amount of water pumped by privately owned wells and ponds for domestic and stock uses. The amount of water pumped for irrigation is not known but is probably small.



The following table shows the average amount of water used daily in the area in 1962.

Source and user	Average use (mgd)
Ohio River:	
Louisville Water Co. ....	88.1
Industry (private sources) .....	83.0
Steam-generating plants .....	392.1
Ground water:	
Louisville Extension Water District .....	3.3
Industry (private sources) .....	35.1
Commercial (private sources) .....	1.7
Domestic and stock (private sources) .....	Small
<b>Total</b> .....	<b>603.3</b>

The distribution of pumping of ground water by industrial and commercial establishments is shown on figure 6.

#### EFFECTS OF WATER DEVELOPMENT

The hydrologic cycle is a constant process, and some water from precipitation is continuously migrating toward areas of withdrawal to replenish the supply. Withdrawals in any part of the Louisville area will adversely affect the hydrologic system if they exceed the rate of replenishment. The effects may be felt in a number of ways, such as changes in water level, changes in water quality or temperature, and changes in the flow of a stream or yield of a well. Table 2 and plate 6 summarize these effects.

#### CONDITIONS AFFECTING OPTIMUM DEVELOPMENT OF WATER RESOURCES

The Falls of the Ohio, a series of shallow rapids navigable only during periods of high-river stage, played an important part in the location of the city of Louisville. People and goods normally had to be transported overland around the falls, and the stopping place grew into a river-trade town. Since that time the number and the complexity of water problems have increased with the population.

Optimum development of the water resources of the Louisville area depends chiefly on the ability of the water manager to cope with problems such as distribution of available supplies, flooding, droughts, quality of water and pollution, and drainage. An appraisal and analysis of Louisville's water problems are needed to plan the development and management of the water resources, particularly ground water. Development has reached a stage beyond which it should not progress without an orderly plan that will insure against waste and misuse. A shortage of water probably will never be a problem in the Louisville area owing to the abundance of water in the Ohio River and in the alluvium beneath the flood plain.

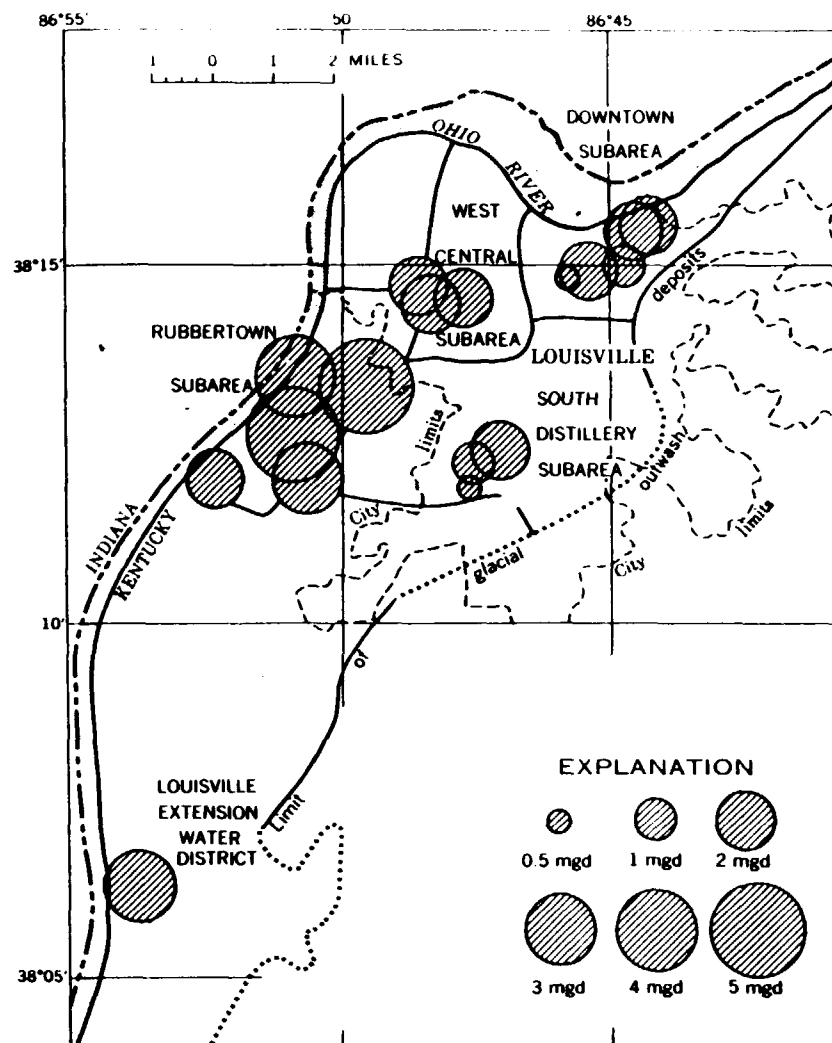


FIGURE 6.—Distribution of ground-water pumping in the Louisville area, 1962.

#### DISTRIBUTION OF AVAILABLE WATER SUPPLIES

The two major sources of water supply, the Ohio River and the alluvial deposits of the Ohio River flood plain, lie along the west border of Jefferson County, and water from these sources is directly available to only 15 percent of the county. Water is piped to the metropolitan and residential sections outside this area for municipal and industrial uses.

Ground water from wells and springs in the limestone of the uplands is generally adequate for farm and domestic supplies. However, dry

TABLE 2.—*Effects of water development on hydrologic conditions in the Louisville area*

Type and (or) area of use	Source	Effects on—			
		Water levels	Chemical quality	Temperature	Yield or flow
Industrial (private sources):					
Air conditioning—Downtown subarea.	Wells in alluvium.	Levels declined to minimum of 373 ft above msl in 1955; recovered to 380 ft in 1962. See pl. 6.	Negligible.....	Negligible.....	Natural flow toward west intercepted; yields sustained.
Cooling—West-Central subarea.	Wells in alluvium and in limestone.	Levels declined to minimum of 375 ft above msl in 1960; recovered to 378 ft in 1962. See pl. 6.	Increase in hardness, sulfate, and total dissolved solids.	.....do.....	Loss of water to heavily pumped Rubbertown subarea; yields sustained after pumping was reduced in 1956.
Cooling—Southwest subarea.	Wells in alluvium.	Levels declined to minimum of 360 ft above msl in 1943; recovered to 392 ft in 1962. See pl. 6.	Negligible.....	.....do.....	Diverted natural flow toward points of pumping; yields sustained after pumping reduced.
Cooling—Rubbertown subarea.	Wells in alluvium.	Levels declined to less than 360 ft above msl in 1945; recovered to 370 ft in 1962. Nearly reached practical limit of drawdown in 1945. See pl. 6.	Increase in chloride in small local areas; increase in sulfate.	Small increase in seasonal range of temperature in wells near river.	Created hydraulic gradients from all directions toward center of pumping. Induced some water from river.
Public: Louisville Water Co.	Ohio River at Zorn Ave.	Negligible.....	None.....	Negligible.....	Normally withdraws a fraction of 1 percent of flow.
Louisville Extension Water District.	Wells in alluvium.	Levels declined to 385 ft above msl in 1962. Levels stabilized for present withdrawal (1962).	Increase in iron content.	.....do.....	Intercepts flow that formerly was lost to river; yields sustained for present withdrawals.
Domestic (private sources).	Wells in alluvium and in limestone; ponds.	Negligible.....	None.....	None.....	Negligible.

holes and wells with inadequate yields have been drilled, and springs that dry up during late summer and fall are present throughout the area. Surface water from small tributary streams, such as Beargrass Creek and Floyds Fork, does not have a perennial flow and cannot sustain a continuous supply without impoundment.

#### CURRENT CONDITIONS

As a source of water supply, the Ohio River is relatively unaffected by seasonal fluctuations; high flows or flooding have no adverse effects on use, and minimum flows exceed the maximum daily withdrawal by many times. Consequently at no time is water from the Ohio River in short supply.

In the alluvial deposits of the flood plain, underlying about 15 percent of Jefferson County, seasonal variation in precipitation and the resulting change in river stage affect the amount of ground water in storage. Heavy rains and resulting high flows of streams during the winter and spring recharge these deposits. The total effect of the recharge, however, is not apparent until late summer and early fall, and during these periods the overall increase in storage may be somewhat obscured by heavy withdrawals for industrial and municipal supplies. During the late fall, when storage is at a minimum, heavy pumping for municipal and industrial uses in southwestern Louisville has sometimes lowered the water table locally, giving cause for concern. No apparent problem of decreased supply has arisen in other areas of the alluvium.

In the uplands, which comprise approximately 85 percent of the county, the seasonal fluctuation of precipitation more directly affects the yield from wells and springs and the flow of streams than it does in the Ohio River bottom lands. In the uplands less water is stored because water moves rapidly through joints and solution openings in the limestone, and because stream gradients are steep, causing rapid runoff.

#### AVAILABLE HYDROLOGIC DATA

Data available for the Ohio River at Louisville consist of daily river stages collected since 1872 and daily discharges since 1928. These data show periods during which high and low flows are most likely to occur and their recurrence interval for the period of record to date. The data include the minimum-flow measurements needed as a base for planning withdrawals.

The hydrologic properties of the Ohio River alluvium have been determined primarily from water-level measurements. At some wells the water-level measurements are made periodically, whereas at others they are made with continuous-recording gages. In specific areas

pumping tests have been conducted under controlled conditions to measure the rate of change of water level with time at various pumping rates. These tests are useful in determining the coefficients of transmissibility and storage and the amount of water that can be induced from the Ohio River. Contours have been drawn on the water surface to show the actual position of the water table throughout the alluvial deposits. The water-level measurements are also used to determine the effect and time lag of high and low river stages and precipitation as well as the effect of nearby pumping wells.

Definition of water moving from the river to the alluvium or vice versa and the movement of water from the limestone of the upland into the alluvium are determined from a composite of both pumping tests and water-level measurements.

The present data on the alluvial area are adequate for most purposes, but continuation of water-level readings in the network of observation wells is of utmost importance for future reference.

Geologic data have been compiled to determine the position of the underlying bedrock and thus to determine the thickness and lithology of the alluvium.

In the uplands the collection of basic data for evaluation of ground- and surface-water studies has been less intensive than that for the Ohio River and its alluvial deposits. Data on ground water are included in a work by MacCary (1956) and in the annual series of U.S. Geological Survey water-supply papers entitled "Surface water supply of the United States" (see list of references, p. C34).

The data show that yields from wells and springs and the flow of streams are subject to seasonal fluctuations; consequently, their water-supply yield is limited. The water resources of the upland area warrant further studies because the data collected to date (1962) are insufficient for a proper evaluation of the area's potential.

#### APPLICABILITY OF EXISTING DATA FOR MANAGEMENT PURPOSES

Effective management of available water resources in the Louisville area requires that data be adequately applied to answer pertinent questions regarding the potential supply and the effects of water development.

Data collected for the Ohio River at Louisville are used to plot curves that show flow data such as the recurrence interval for flows of known magnitude. To the water manager, the recurrence of low flows would be important with regard to the probable deterioration of chemical and bacteriological quality and increased temperature. The recurrence interval for floods of a specific stage height would de-

termine the type of installation for setting and protecting pumping and other equipment at the river.

Data collected throughout the area of the alluvial deposits have been used to show the potential supply and the effects of water development in specific areas. Several examples of the use of the data are as follows:

1. An investigation to determine the quantity and quality of water available in northeastern Louisville was made during the period 1945-47. Analyses of data collected during this period showed that 280 mgd of water of suitable quality for domestic and industrial uses could be induced from a 6.4-mile reach of the Ohio River northeast of Louisville (Rorabaugh 1956b).
2. An appraisal of the available ground-water supply southwest of Louisville during the period 1944-46 is described by Rorabaugh (1946a). He estimated the storage to be about 1.5 billion gallons per foot below the water table; infiltration from rainfall on the area, about 11 mgd; and flow into the deposit of glacial sand and gravel from the east, about 1 mgd. Natural discharge to the river in the area was about 800,000 gpd per mile along the river.
3. Periodic water-level measurements have been used to compile the water-level contour maps which show the cones of depressions in the four subareas (pl. 3). Heavy pumping by industry had lowered the water level as much as 60 feet in the south distillery area by 1944, and 65 feet in the downtown subarea by 1955. In both areas the water levels were only about 10 feet above the underlying bedrock at the given drawdowns. In the Rubbertown subarea, record lows were observed in 1945. Water levels recovered through 1948, but increased pumpage has again introduced a downward trend, and in the west-central subarea water levels declined to within 10 to 15 feet of the underlying bedrock in 1948.

In the upland area of the county the limitations of ground water in limestone and of the water in streams as a major source of supply have been recognized from the initial water studies. The water manager can interpret the data in terms of the local situation and choose between the alternatives of installing individual water supplies for homes or developments, impounding a nearby stream, or bringing in water from outside the area.

#### FLOODING

##### CURRENT CONDITIONS

The great 1937 flood on the Ohio River inundated large parts of the city and adjacent areas and caused property damage of \$57 mil-

lion in the Louisville area, according to the U.S. Army Corps of Engineers. Eight years later, in 1945, the second highest flood of record caused property damage estimated at \$4 million. Subsequent planning by many agencies resulted in the construction—completed in 1953 by the Corps of Engineers at a cost of about \$29 million—of floodwalls, levees, and pumping stations to protect the city (pl. 3).

In recent years many flood-control dams and reservoirs have been constructed on tributary streams upstream from Louisville in the Ohio River basin. These control structures will have an effect in reducing flood heights at Louisville by delaying part of the floodwaters which normally would contribute to floods at Louisville. These structures in conjunction with the floodwall-levee system at Louisville have largely eliminated the damage caused by flooding of the Ohio River.

Most of the damage from flooding in Jefferson County in recent years can be attributed to flash floods on the tributary streams, notably on Beargrass, Pond, Fern, and Mill Creeks. Generally, average floods on the tributary streams are not troublesome. In extremely high floods, however, poor runoff conditions cause the flooding of homes in wide, flat overflow areas. In particular, this occurs in the upper reaches of Beargrass and Pond Creeks which extend into the suburban residential parts of Louisville. Most of the Beargrass Creek basin drains inside the Louisville floodwall-levee system, and downstream flooding is controlled by the Beargrass Creek pumping station. In the lower reaches of Pond Creek, backwater from Ohio River floods contributes to the flooding of residential areas.

Some flooding occurs in the basin of Floyds Fork, which drains most of the east half of the county, but the basin is sparsely settled and floods mainly affect the bottom farmlands.

##### AVAILABLE HYDROLOGIC DATA AND ADEQUACY

Flow records available for the Ohio River at and upstream from Louisville and for the larger tributary streams in Jefferson County are adequate for most needs. There is a continuous record of flood stages on the Ohio River at Louisville for almost 100 years, and continuous daily flow records have been obtained at Louisville since 1928. Continuous flow records have been obtained for Middle and South Fork Beargrass Creek, Pond Creek, and Floyds Fork since August 1944. Flood-stage and floodflow frequency curves have been developed from these records and are available for water development planning purposes and for design of control and use structures.

A flood-inundation map is available for the 1937 flood, but similar maps are not available or are incomplete for the later major floods. Such maps are essential to fix precise floodwater elevations and limits.

Modern topographic maps are available for the entire area but have been rapidly outdated by construction activities.

#### APPLICABILITY OF EXISTING DATA FOR MANAGEMENT PURPOSES

Design of control structures and many planning and zoning activities related to flooding are based on the availability of basic hydrologic records. Flood-frequency curves provide an evaluation of the average frequency of recurrence which may be expected for floods of various magnitudes on the Ohio River at Louisville. Based on this evaluation, a flood equaling or exceeding flood stage—crest elevation, 431 feet msl (mean sea level); peak discharge, 500,000 cfs—may be expected to occur every 1 or 2 years, on the average.

On this same basis average recurrence frequencies for floods of other magnitudes on the Ohio River at Louisville are as follows:

Recurrence interval (years)	Crest elevation (ft above msl)	Peak discharge (cfs)
20-----	445.5	720,000
50-----	450	820,000

Most floods and all high floods on the Ohio River at Louisville have occurred during the 4-month period January through April. Major floods rise and recede at a relatively slow rate, usually remaining at or near the crest for several days. For example, in the record 1937 flood, the stage of the Ohio River at Louisville was within a foot of the crest for 3 days and within 5 feet of the crest for 9 days.

Damage from flooding on tributary streams in Jefferson County could be relieved further by small flood-control structures and reservoirs in the upper reaches of the streams. The water thus stored could be used for irrigation and stock supplies and for recreation if the quality is satisfactory. The planning for these structures should be done in conjunction with an adequate program of planning and zoning to insure that residential building does not take place in floodwater-retention areas. To this end flood-inundation maps should be prepared for all tributary basins to indicate areas where waters will pond during and after floods.

Collection and analysis of continuous-flow records should be continued to monitor changes brought about by flood-control structures and urbanization. The addition of hundreds of acres of streets, drives, sidewalks, and roofs will increase the speed and magnitude of runoff, and existing frequency curves will need to be adjusted accordingly.

Flood-inundation maps should be updated as rapidly as construction progresses and land contours are changed. These maps should be published and made available to all interested users.

#### DROUGHTS

Periods of unusual dryness occur at frequent intervals in the Louisville area, but the periods do not follow a regular sequence and extreme conditions do not prevail for long periods of time. Serious droughts occurred in the summer of 1930 and in the successive summers of 1952-54. From the standpoint of the area's water resources, the seriousness of a drought is measured by its effect on water supply, power generation, and waste disposal. The usual effects are lowering of streamflow and ground-water levels.

#### CURRENT CONDITIONS

Droughts of the magnitude experienced in the Louisville area have little effect on municipal and industrial water supplies and on power generation. Because of the large volume of water flowing in or stored in the major sources of these supplies (the Ohio River and the deposits of alluvial sand and gravel), prolonged drought rarely lowers the supply to a point that approaches the demand.

Local water problems, however, are caused by droughts. Water shortages become acute in the uplands of the eastern and southeastern parts of Jefferson County where public water supplies are not available. Flow in most of the streams ceases and many shallow wells, springs, cisterns, and ponds become dry. Water for domestic and stock uses must be hauled into the area affected. Lack of streamflow for dilution of sewage and industrial waste creates a health hazard in some localities. Growth of algae during these periods imparts an unpleasant taste that is difficult to eliminate from the water.

#### AVAILABLE HYDROLOGIC DATA AND ADEQUACY

Flow records are available for the Ohio River and for the larger tributary streams in Jefferson County and are adequate to indicate the seriousness of drought. Drought-frequency curves showing the recurrence expectancy of minimum flows have been developed from these records and are adequate for use in planning for reservoir-storage facilities for emergency supply and for dilution of waste. Available ground-water information includes continuous and periodic water-level measurements in sand-and-gravel aquifers and periodic measurements in bedrock aquifers. Quantitative estimates of ground water in storage are available for most sand-and-gravel aquifers but are not available for bedrock aquifers. The available data are adequate to indicate the effect of droughts on sand-and-gravel aquifers and to predict problem areas. Additional information is needed for bedrock aquifers.

## APPLICABILITY OF EXISTING DATA FOR MANAGEMENT PURPOSES

Flow data indicate that droughts have little effect on the adequacy of the Ohio River to supply water needs at current use rates and at projected use rates for the near future. The minimum daily flow of the Ohio River of 2,100 cfs recorded in 1930 during the height of the most serious drought of record is shown to be about 11 times greater than the maximum daily pumpage to date (1962) by the Louisville Water Company. Thus, water managers can plan for greater withdrawals from the Ohio River without fear of depleting the supply. In contrast, the flow of most tributary streams in the uplands of Jefferson County recedes to a very low quantity in late summer and fall, and the streams sometimes go dry for periods of a few days to a few weeks. The use of these streams as sources of perennial water supply or for dilution of waste would require that storage facilities be provided. The drought-frequency curves can be used to determine the amount of storage required to maintain specific outflow rates for a specific period of time.

Additional ground water is available for development from the sand-and-gravel aquifer in the flood plain. The potential supply available from the deposit of sand and gravel without depletion of storage is estimated to be about 370 mgd (Bell, 1962). Thus, the estimated average withdrawal of about 40 mgd in 1962 is only 11 percent of the available supply. Drought decreases the amount of ground water in storage in the sand-and-gravel deposit, but the long-term record of water-level measurements shows that there is little need for concern during the average drought. A more serious drought, such as the droughts experienced in the three successive summers of 1952-54, caused water levels in two centers of pumping to decline to levels that were only 10 feet above the surface of the bedrock. The amount of the decline that may have been due to increased pumping is difficult to assess, however.

The available records indicate that water levels in the bedrock aquifers of the uplands are more affected by drought than are those in the flood plain. Springs and the shallower wells often go dry during average droughts. The coverage of periodic water-level measurements is not now adequate to indicate minimum levels for all parts of the upland, but the data can be used to predict minimum levels, which can be used to specify the desired depth of drilling of wells in bedrock. Sufficient ground water is available to sustain the yield of many more wells in the area, provided that the wells are drilled to the proper depth.

## CHEMICAL QUALITY AND POLLUTION

## CURRENT CONDITIONS

Through the efforts of ORSANCO and Federal, State, and local governments, almost a billion dollars has been invested by cities and towns in the Ohio Valley for pollution-abatement facilities. Sewage-treatment plants serving 90 percent of the sewer-using population of the Ohio Valley are in operation or under construction (1962); 97 percent of the population on the main stem of the Ohio River is thus served. In addition, ORSANCO minimum requirements for waste control, are being met by 85 percent of the industrial establishments. As a result the quality of the water in the Ohio River at Louisville has improved steadily in the 14 years since ORSANCO was formed. Periodic monitoring of the quality of the Ohio River is done by the Louisville Water Company in cooperation with ORSANCO.

The quality of the water in the tributary streams in Jefferson County is not monitored on a systematic basis but is checked periodically by State and local health agencies. The quality has been improved by the extension of sewage systems and the installations of sewage-treatment facilities for suburban developments. The chemical character of the water in Pond Creek is altered by industrial wastes discharged into it, and thus its quality is the least acceptable of all the tributary streams.

The chemical quality of ground water in the area is suitable for domestic and some industrial uses except in a few local areas where the water is contaminated by outside sources. The ground water is generally hard; water from alluvium contains a high concentration of iron. In addition, a high concentration of sulfate is present in alluvial ground water in the north-central part of the city. The presence of these constituents requires that the water be treated for some industrial uses. The water from alluvium is sampled periodically by the Geological Survey at 12 wells, and local industries collect samples at additional wells.

## AVAILABLE HYDROLOGIC DATA AND APPLICABILITY FOR MANAGEMENT PURPOSES

Data on the quality of the Ohio River water are available through the monitoring system of ORSANCO and the Louisville Water Company and are probably adequate for most management decisions. The type and cost of treatment for various requirements can be estimated from the accumulated data, and changes in treatment needed for changing river quality are forecast from the monitoring system. The river quality should change little in the reach through Jefferson

County, provided that the quality of the water entering the main stream from the several tributary streams is controlled.

Some analyses of the water from the smaller streams in the county are available and are useful for planning and for developing supplies. The existing data are probably adequate to show the suitability of the water for specific uses. However, the usefulness of the data could be enhanced by periodic monitoring of the streams downstream from known or potential sources of pollution. Changes in quality with time would be indicated and would serve as a guide for future treatment.

Sampling and analysis of ground water in the alluvial area of Louisville is done annually by the Geological Survey. There is no periodic sampling from wells in the bedrock of the uplands, but spot analyses are available for this area. The existing data on quality of ground water are sufficient to show the suitability of the water for specific uses. They are also adequate to show the location and extent of the concentrations of mineral constituents and the physical properties of the ground water that are objectionable. Periodic sampling near known centers of contamination should be continued to indicate changes in quality.

#### DRAINAGE

Lack of adequate surface drainage is a pressing problem when it becomes detrimental to human health and well-being and affects the economy of a community. Areas of poor drainage that are subject to waterlogging affect the operation of individual household sewage-disposal systems and become a health hazard. Heavy rains sometimes overload the smaller drainageways, causing local floods. A problem also exists during long periods of little or no runoff when drainage channels become overgrown with weeds or serve as breeding grounds for mosquitoes.

#### CURRENT CONDITIONS

The low-lying areas in the southern and southwestern parts of Louisville and Jefferson County, extending from Shively northeast to the St. Matthews area, part of which formerly was known as the "Wet Woods," have little topographic relief and are underlain by silt and clay or impermeable shale at shallow depth. Downward seepage of water is restricted, and during rainy seasons water accumulates in numerous small depressions. Natural drainage is poor and water is carried off primarily in manmade ditches, some of which are too shallow or narrow to drain away the water as fast as it accumulates.

Ponding and saturation of the soil on top of the shale often result in flooded basements and in malfunction of septic tanks and leaching fields. The drainage problem is aggravated in summer months because the ditches become clogged with weeds and refuse that impede the flow of water.

#### AVAILABLE HYDROLOGIC DATA AND APPLICABILITY

Problems of inadequate drainage were not within the scope of the Survey's water-resource investigations in the Louisville area. The Louisville Metropolitan Sewer District has investigated and made recommendations on the need for storm sewers, drainage ditches, culverts, and concrete-lined channels within the city of Louisville and in southwestern Jefferson County. There is a need for a similar study of the whole of Jefferson County outside the city. Many of the local problems are related to impermeable soil and rock material that limit subsurface drainage. Some of the problems in the past have been lessened by restrictions on the installation of new septic tanks and leaching fields in saturated areas and by the gradual extension of storm and sanitary sewers to serve the problem areas.

Data used in solving drainage problems include data on magnitude of runoff with time from the tributary basins, geologic and subsurface maps, and information on the depth to the water table.

#### CONCLUSIONS

The abundance of water in the Ohio River and in the alluvium beneath the flood plain practically precludes a serious shortage of water in the Louisville area. The minimum flow of record of the Ohio River at Louisville of 2,100 cfs (1,360 mgd) plus the estimated potential available ground water of 370 mgd far exceeds the 211 mgd of water withdrawn for public and industrial uses in 1962.

The Ohio River supplies water for all uses in the area and is the source of the municipal supply for Louisville. Ground water in the alluvium is utilized for industrial cooling and, in the southwestern part of the area, is also a source of municipal supply. Limestone underlying the alluvium in the west-central part of Louisville is a secondary source of water for industrial cooling. Bedrock in the uplands yields water to some wells and springs for domestic and stock uses.

Natural waters in the area are generally of the calcium bicarbonate or calcium magnesium bicarbonate type and contain varying amounts of sulfate. Ground water is very hard and commonly contains iron in excess of 1 ppm.

Water problems of the area are chiefly those of management and are associated with floods, drought, drainage, and the distribution and quality of available supplies.

Much information on water resources, contained in reports resulting from water investigations during the past two decades, has been helpful to water users for planning and developing supplies. Although the data are applicable in similar situations, up-to-date water information will be needed to resolve problems created by demands in the future.

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FIT IV

# Hydrology of the Alluvial Deposits in the Ohio River Valley in Kentucky

By JOHN T. GALLAHER and W. E. PRICE, Jr.

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GEOLOGICAL SURVEY WATER-SUPPLY PAPER 1818

*Prepared in cooperation with the Commonwealth of Kentucky, University of Kentucky, Kentucky Geological Survey, and the Kentucky Department of Commerce*



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UNITED STATES GOVERNMENT PRINTING OFFICE, WASHINGTON : 1966

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The least favorable areas for the development of ground-water supplies are in the valley of the Licking River and near the walls of the Ohio River valley. The alluvium of the Licking River valley is fine grained and yields only small quantities of water to wells; the highest reported yield is 60 gpm. The chances of obtaining large supplies of water become progressively less closer to the valley walls, because the section of saturated alluvium becomes thinner and generally finer grained.

Probably the best areas for obtaining large ground-water supplies are where thick deposits of sand and gravel are present in the old deep channel of the Ohio River beneath the cities of Ludlow, Covington, Newport, and Bellevue.

In terms of water quality, the poorest areas for development are those close to the valley walls and near areas of known industrial contamination of water. The most favorable sites are near the bank of the Ohio River. Here the river water enters the sand and gravel and dilutes the hardness and dissolved solids of the ground water to less-than-average concentrations. Ground water in the Licking River valley seems to be less mineralized than that in most places in the Ohio Valley alluvium, but more analyses are needed to substantiate this conclusion.

#### LOUISVILLE AREA

##### LOCATION

The Louisville area is in a large alluvial bottom near the midpoint of the Ohio River valley in Kentucky. For convenience of discussion, the authors have divided the Louisville area into subareas (fig. 21) on the basis of ground-water pumpage and industrial usage.

More detailed study has been made of the geology, hydrology, and quality of water in this area than at any other place in the Ohio River valley. To date more than 25 atlases and written reports have been published concerning the area. The latest of these reports are Hydrologic Investigations Atlases 130 and 111 ("Geology and Hydrology of Alluvial Deposits along the Ohio River between Prospect and Southwestern Louisville, Kentucky," and "Geology and Hydrology of Alluvial Deposits along the Ohio River between Southwestern Louisville and West Point, Kentucky" (Price, 1964)) and Water-Supply Paper 1819-C ("Summary of Hydrologic Conditions of the Louisville Area, Kentucky" (E. A. Bell, 1966)). Other pertinent reports are included in the list of references at the end of this report. Because of the amount of detailed coverage, this section is intended to serve only as a brief summary of the hydrologic system of the area.

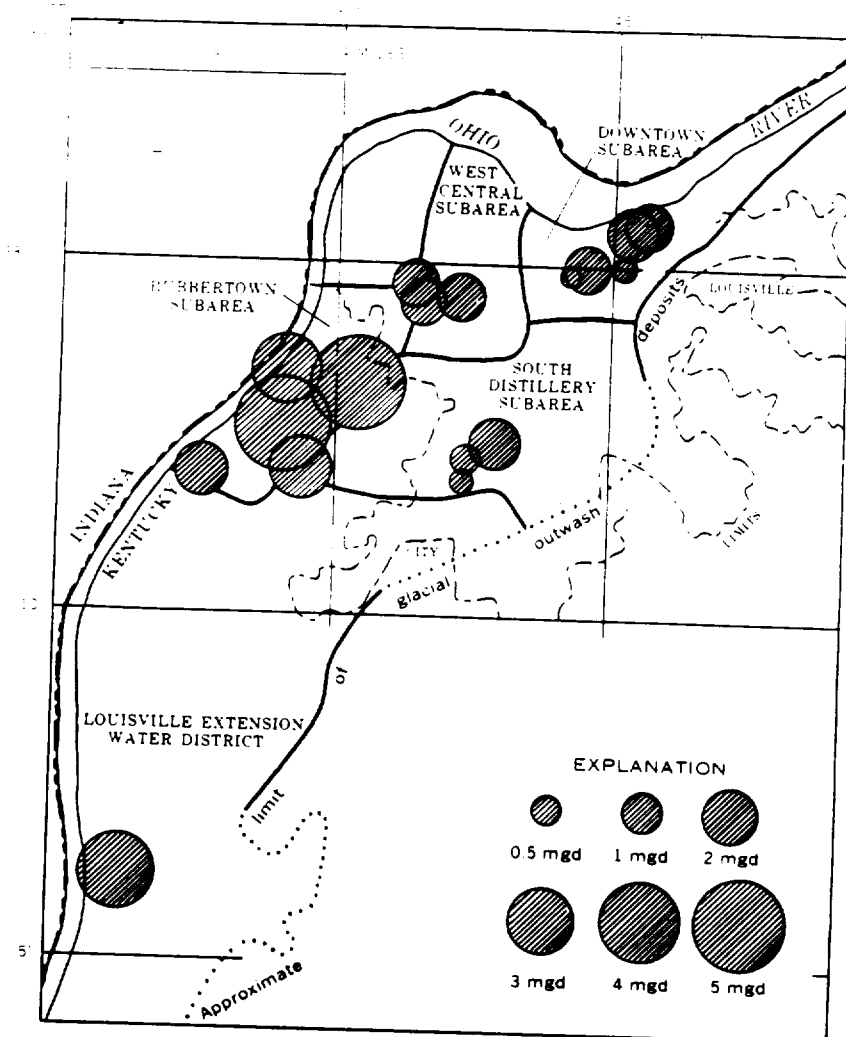


FIGURE 21.—Distribution of ground-water pumping in the Louisville area, 1962.

#### GEOLOGY AND SATURATED THICKNESS

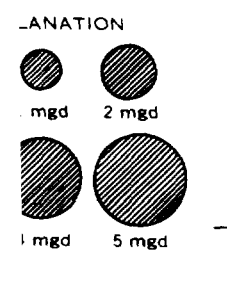
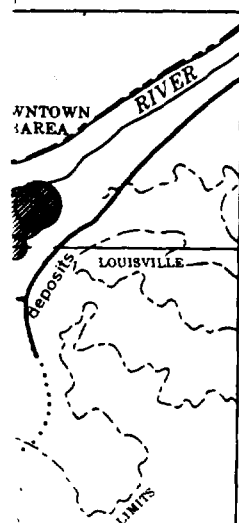
The bedrock underlying the Ohio River alluvium of the area is made up primarily of limestones and shales of Silurian, Devonian, and Mississippian ages. The old deep channel, cut into these rocks down to an altitude of about 335 feet, trends southwest across the area from Towhead Island to a point south of the Rubbertown industrial subarea. Upstream and downstream from these points, the old channel approximately follows the present river channel.

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Louisville area, 1962.

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The alluvial deposits in the Louisville area are mostly of glacial origin. Their thickness ranges from 0 to 150 feet, depending upon the altitude of the erosional surface of the underlying bedrock formations. The upper part of the unconsolidated deposits consists of 5-40 feet of relatively impermeable clay, silt, and fine sand. Beneath this layer are thick deposits of permeable sand and gravel. The general distribution of the alluvial deposits is shown in figure 22.

The saturated thickness of alluvium varies widely with local pumpage, but ranges from 0 to 80 feet. The water table (fig. 22), generally slopes toward the river, but heavy pumpage has created local cones of depression. Close to the river, pumping levels have been lowered to such a degree locally that the normal water-level gradient is reversed, and the water flows from the river toward pumped wells.

#### WATER SOURCE AND USE

More than 40 billion gallons of water is used annually (Kulp and Hopkins, 1960) in the Louisville area. Three-fourths of this is taken from the Ohio River for public supply; most of the remainder of the water comes from alluvium and is used by the Louisville Extension Water District for public supply and by most of the industries for manufacturing, air conditioning, and cooling purposes. Supplies of

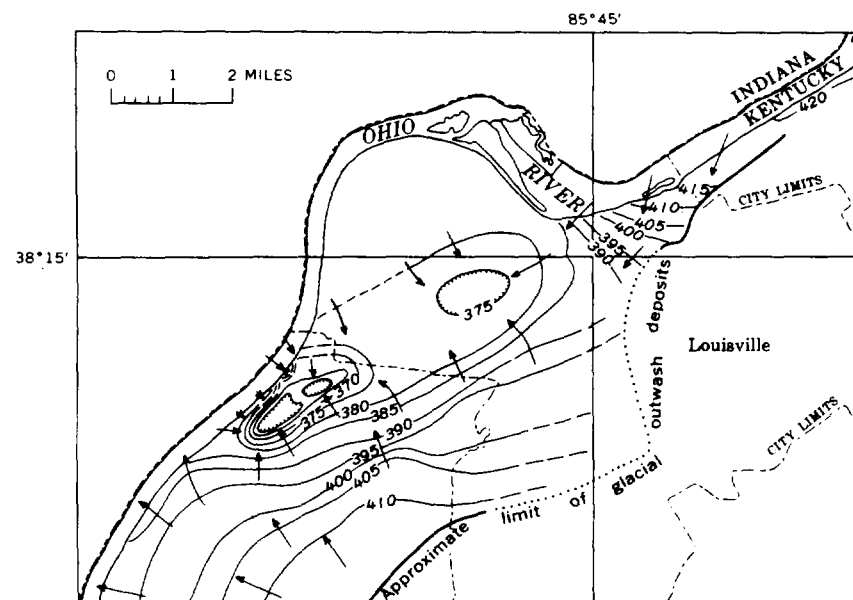


FIGURE 22.—Water-level contours in the Louisville area, December 1960 (from Whitesides and Nichols, 1961). Altitude given in feet above mean sea level. Contour interval, 5 feet. Arrows indicate direction of ground-water movement.

ground water in this area are obtained primarily from large-diameter drilled wells that penetrate the full thickness of the aquifer; exceptions are two radial-collector wells within a few hundred feet of the Ohio River. Some water used by local distilleries is pumped from the limestone aquifer underlying the alluvium.

Much water, especially that which has been used for cooling purposes, is returned to the aquifer by means of recharge wells. Though primarily a means of avoiding payment of sewer-rental taxes, this method of disposal helps to maintain an overall balance between the total withdrawal and the total recharge of the aquifer. From 1944 to 1960 the amount of water returned to the aquifer by artificial recharge ranged from 0.6 to 1.6 mgd (million gallons per day). There has been an apparent decline in this practice within the past several years, however, and the recharge amount reported by industry for 1962 was only 0.517 mgd.

#### WELL YIELDS AND AQUIFER TESTS

The average yield for all drilled wells in alluvium is probably about 200 gpm, but each of the better wells of the area produces 400–500 gpm, and a few yield 800–1,000 gpm. The two radial-collector wells reportedly pump 2,600 and 3,500 gpm. Specific capacities for wells in alluvium range from 6 to 500 gpm per ft, with a median of 38 gpm per ft. Permeabilities, determined on the basis of laboratory studies of alluvial samples, ranged from 120 to 1,700 gpd per sq ft, with a median of 500 gpd per sq ft. Transmissibilities, determined by pumping tests, ranged from 18,000 to 121,000 gpd per ft, with a median of 68,500 gpd per ft.

#### QUALITY OF WATER

Ground-water quality varies widely throughout the area; it changes according to location, type of underlying bedrock, and rate of withdrawal.

Water from wells in limestone is very highly mineralized. Hardness as  $\text{CaCO}_3$ , averages about 580 ppm, and sulfates average about 450 ppm.

Water in alluvium varies in quality but is generally very hard, high in bicarbonate and iron, and, in many places, high in sulfate. Average hardness of water from wells in alluvium in the part of Louisville included in Hydrologic Investigations Atlas 130 is 422 ppm and in Hydrologic Investigations Atlas 111, is 296 ppm. Sulfate content of water in these atlas areas averaged 162 and 26 ppm. The alluvium in the upstream part (HA-130) overlies limestone bedrock, from which it derives its high mineralization. Downstream, the underlying impermeable shale effectively prevents much of the mineralized limestone water from entering the alluvium.

There is also considerable variation in distance within a few hundred feet in wells that are far from the river that enters the formation by infiltration.

A notable change in water quality is due to pumping. Large areas of water are thereby pumped and the water is softer and pumpage has not in the West-Central subarea where bedrock are pumping water.

Average ground-water temperature is from 47° to 66° F. and river water induced by

The most favorable of good-quality water makes perennially in southwestern Louisville Gas & Electric subarea, however, is limited because the water is lowered to the maximum of the river and in all mineralized water.

The alluvial area investigations Atlas 9 the Ohio Valley. It is 37 river miles down half a mile wide) at this point. The large Flipping Creek and level at the riverbank at the upstream and land, however, is be

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There is also considerable variation in the quality of water, owing to variation in distance of wells from the Ohio River. Water in wells within a few hundred feet of the river is less mineralized than that in wells that are farther away. This reflects the diluting effect of river water that enters the alluvium during flood stage or is induced into the formation by infiltration.

A notable change in water quality has occurred in areas of heavy pumping. Large withdrawals have lowered the water table in some areas and thereby induced infiltration from the river; the pumped water is softer and of lower overall mineral content. Where heavy pumpage has not induced infiltration from the river, however, as in the West-Central subarea, wells in alluvium overlying the limestone bedrock are pumping increasing amounts of hard, highly mineralized water.

Average ground-water temperature in the area is 58°F. The range, from 47° to 66° F, depends largely on the temperature and quantity of river water induced by infiltration.

#### CONCLUSIONS

The most favorable areas for future development of large quantities of good-quality water are near the river, where induced infiltration makes perennially large supplies possible. This condition exists in southwestern Louisville, and in northeastern Louisville from the Louisville Gas & Electric plant to Harrods Creek. In the Rubbertown subarea, however, the opportunity for further development is very limited because the cone of depression there (fig. 22) has already been lowered to the maximum allowable for sustained yields. Wells near the river and in alluvium overlying shale bedrock produce the least mineralized water.

#### BRANDENBURG AREA

##### LOCATION

The alluvial area near Brandenburg, included in Hydrologic Investigations Atlas 95, is typical in size to many river bottoms along the Ohio Valley. It is a crescent-shaped bottom  $6\frac{1}{2}$  miles long about 37 river miles downstream from Louisville. Though narrow (about half a mile wide) it occupies the width of the Ohio River valley at this point. The land surface has been dissected by Doe Run and Flipping Creek and ranges in altitude from 400 feet above mean sea level at the riverbank to more than 460 feet along the valley wall and at the upstream and downstream ends of the bottom. Most of the land, however, is between 440 and 450 feet above mean sea level.

R. Allan Freeze

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University of British Columbia  
Vancouver, British Columbia

John A. Cherry

Department of Earth Sciences  
University of Waterloo  
Waterloo, Ontario

# *GROUNDWATER*

Prentice-Hall, Inc.  
Englewood Cliffs, New Jersey 07632



Table 2.2 Range of Values of Hydraulic Conductivity and Permeability

	Rocks	Unconsolidated deposits	$k$ (darcy)	$k$ (cm <sup>2</sup> )	$K$ (cm/s)	$K$ (m/s)	$K$ (gal/day/ft <sup>2</sup> )
			$10^5$	$10^{-3}$	$10^2$	1	$10^6$
			$10^4$	$10^{-4}$	10	$10^{-1}$	$10^5$
			$10^3$	$10^{-5}$	1	$10^{-2}$	$10^4$
			$10^2$	$10^{-6}$	$10^{-1}$	$10^{-3}$	$10^3$
			10	$10^{-7}$	$10^{-2}$	$10^{-4}$	$10^2$
			1	$10^{-8}$	$10^{-3}$	$10^{-5}$	10
			$10^{-1}$	$10^{-9}$	$10^{-4}$	$10^{-6}$	1
			$10^{-2}$	$10^{-10}$	$10^{-5}$	$10^{-7}$	$10^{-1}$
			$10^{-3}$	$10^{-11}$	$10^{-6}$	$10^{-8}$	$10^{-2}$
			$10^{-4}$	$10^{-12}$	$10^{-7}$	$10^{-9}$	$10^{-3}$
			$10^{-5}$	$10^{-13}$	$10^{-8}$	$10^{-10}$	$10^{-4}$
			$10^{-6}$	$10^{-14}$	$10^{-9}$	$10^{-11}$	$10^{-5}$
			$10^{-7}$	$10^{-15}$	$10^{-10}$	$10^{-12}$	$10^{-6}$
			$10^{-8}$	$10^{-16}$	$10^{-11}$	$10^{-13}$	$10^{-7}$

Table 2.3 Conversion Factors for Permeability and Hydraulic Conductivity Units

	Permeability, $k^a$			Hydraulic conductivity, $K$		
	cm <sup>2</sup>	ft <sup>2</sup>	darcy	m/s	ft/s	U.S. gal/day/ft <sup>2</sup>
cm <sup>2</sup>	1	$1.08 \times 10^{-3}$	$1.01 \times 10^8$	$9.80 \times 10^2$	$3.22 \times 10^3$	$1.85 \times 10^9$
ft <sup>2</sup>	$9.29 \times 10^2$	1	$9.42 \times 10^{10}$	$9.11 \times 10^3$	$2.99 \times 10^6$	$1.71 \times 10^{12}$
darcy	$9.87 \times 10^{-9}$	$1.06 \times 10^{-11}$	1	$9.66 \times 10^{-6}$	$3.17 \times 10^{-5}$	$1.82 \times 10^1$
m/s	$1.02 \times 10^{-3}$	$1.10 \times 10^{-6}$	$1.04 \times 10^3$	1	3.28	$2.12 \times 10^6$
ft/s	$3.11 \times 10^{-4}$	$3.35 \times 10^{-7}$	$3.15 \times 10^4$	$3.05 \times 10^{-1}$	1	$6.46 \times 10^5$
U.S. gal/day/ft <sup>2</sup>	$5.42 \times 10^{-10}$	$5.83 \times 10^{-13}$	$5.49 \times 10^{-2}$	$4.72 \times 10^{-7}$	$1.55 \times 10^{-6}$	1

<sup>a</sup>To obtain  $k$  in ft<sup>2</sup>, multiply  $k$  in cm<sup>2</sup> by  $1.08 \times 10^{-3}$ .

**OVERSIZED**

**DOCUMENT**

**NUS CORPORATION AND SUBSIDIARIE.****TELECON NOTE****CONTROL NO. F4-8801-41****DATE: May 2, 1988****TIME: 0835****DISTRIBUTION:****McCracken County Landfill  
F4-8801-41****BETWEEN: Mark Lyverse****OF: USGS, Louisville, Kentucky****PHONE: (502) 582-5241****AND: Carol Northern, NUS Corporation***Carol Northern 5/2/88***DISCUSSION:**

The Ohio River is well entrenched and acts as a sink. Groundwater in the formation on either side of the river flows towards and eventually into the Ohio River.

The river is gaining water from both sides and little or no water flows under the river.

**NUS CORPORATION AND SUBSIDIARIES**

REFERENCE # 24

**TELECON NOTE****CONTROL NO.****DATE:** July 13, 1988**TIME:** 1415**DISTRIBUTION:****BETWEEN:** John Huber**OF:** Louisville Water Company**PHONE:** (502) 569-3600**AND:** Carol Northern*Carol Northern 7/13/88***DISCUSSION:**

The Louisville Water Company serves the city of Louisville, most of Jefferson County and parts of Bullitt and Oldham Counties, Kentucky. The Louisville Water Company (LWC) relies exclusively for water on two (2) surface water intakes on the Ohio River. One intake is located at river mile 600.6 (Zorn Avenue). The second intake is located above Herrods Creek at Mayfair Avenue and Jacobs School Road.

LWC has 205,000 customer attachments which serve approximately 700,000 people. LWC also wholesales water to other systems, including the Jeffersontown Water and Sewer Commission. These systems serve an additional 40,000 persons. The water distributed by LWC undergoes extensive treatment which includes fluoridation and chlorination.

There are private wells located within the LWC service area. These wells probably obtain water from the flood plain alluvium at depths ranging from 60-90 feet. LWC has a very liberal water main extension policy which has encouraged many private well owners to hook up to the municipal system.

To Mr. Huber's knowledge, most trailer park communities in the Louisville area use municipal water. The local health department may have more detailed information.

Areas in Jefferson County not served by LWC include the SE and SW portions of the county. Both areas are largely rural. Mr. Huber estimates there are 5,000 people in SE Jefferson County that do not have access to municipal water.



# DISTRIBUTION SYSTEM



## LEGEND

12" and Larger Mains ————

8" and 10" Mains ————

6" Mains - - - - -

4" and Smaller - - - - -

Valves ————

Closed Valves ————

Pressure Reducing Valve —◆— (Pressure Planes Separation)

Pressure Reducing Station ————

Gauge Station ○

REFERENCE # 25



**NUS CORPORATION AND SUBSIDIARIES**

REFERENCE # 26

**TELECON NOTE****CONTROL NO.****DATE:** April 26, 1990**TIME:** 1415**DISTRIBUTION:****BETWEEN:** Charles Schott**OF:** Louisville Water Co.**PHONE:** 502-569-3600**AND:** Wendell C. McLendon, NUS Corporation**DISCUSSION:**

The Louisville Water Company serves approximately 208,500 residential, industrial, and commercial customers. The total population served is approximately 700,000. There are areas within the city of Louisville that use private wells.

Approximately 3,758 residences in Jefferson County obtain water from private wells (485 have access but have not tied on to the municipal water system).

# ENDANGERED AND THREATENED SPECIES

REFERENCE # 27



U.S. FISH AND WILDLIFE SERVICE  
REGION 4 - ATLANTA



Federally Listed Species by StateKENTUCKY

(E=Endangered; T=Threatened; CH=Critical Habitat determined)

MammalsGeneral Distribution

- Bat, gray (Myotis grisescens) - E  
 Bat, Indiana (Myotis sodalis) - E, CH  
 Bat, Virginia big-eared (Plecotus townsendii virginianus) - E  
 Cougar, eastern (Felis concolor cougar) - E

Entire state  
 Entire state  
 Eastern, primarily  
 Lee County  
 Entire state

Birds

- Eagle, bald (Haliaeetus leucocephalus) - E  
 Falcon, American peregrine (Falco peregrinus anatum) - E  
 Falcon, Arctic peregrine (Falco peregrinus tundrius) - T  
 Tern, least (Sterna antillarum), interior population - E  
 Warbler, Bachman's (Vermivora bachmanii) - E  
 Warbler, Kirtland's (Dendroica kirtlandii) - E  
 Woodpecker, ivory-billed (Campephilus principalis) - E  
 Woodpecker, red-cockaded (Picoides (=Dendrocopos) borealis) - E

Entire state  
 North  
 Entire state  
 Mississippi and Ohio Rivers  
 West  
 East  
 West  
 Southeast

Fishes

- Dace, blackside (Phoxinus cumberlandensis) - T

Upper Cumberland River  
 System (Pulaski, Laurel,  
 McCreary, Whitley, Knox,  
 Bell, Harlan, and Letcher  
 Counties)

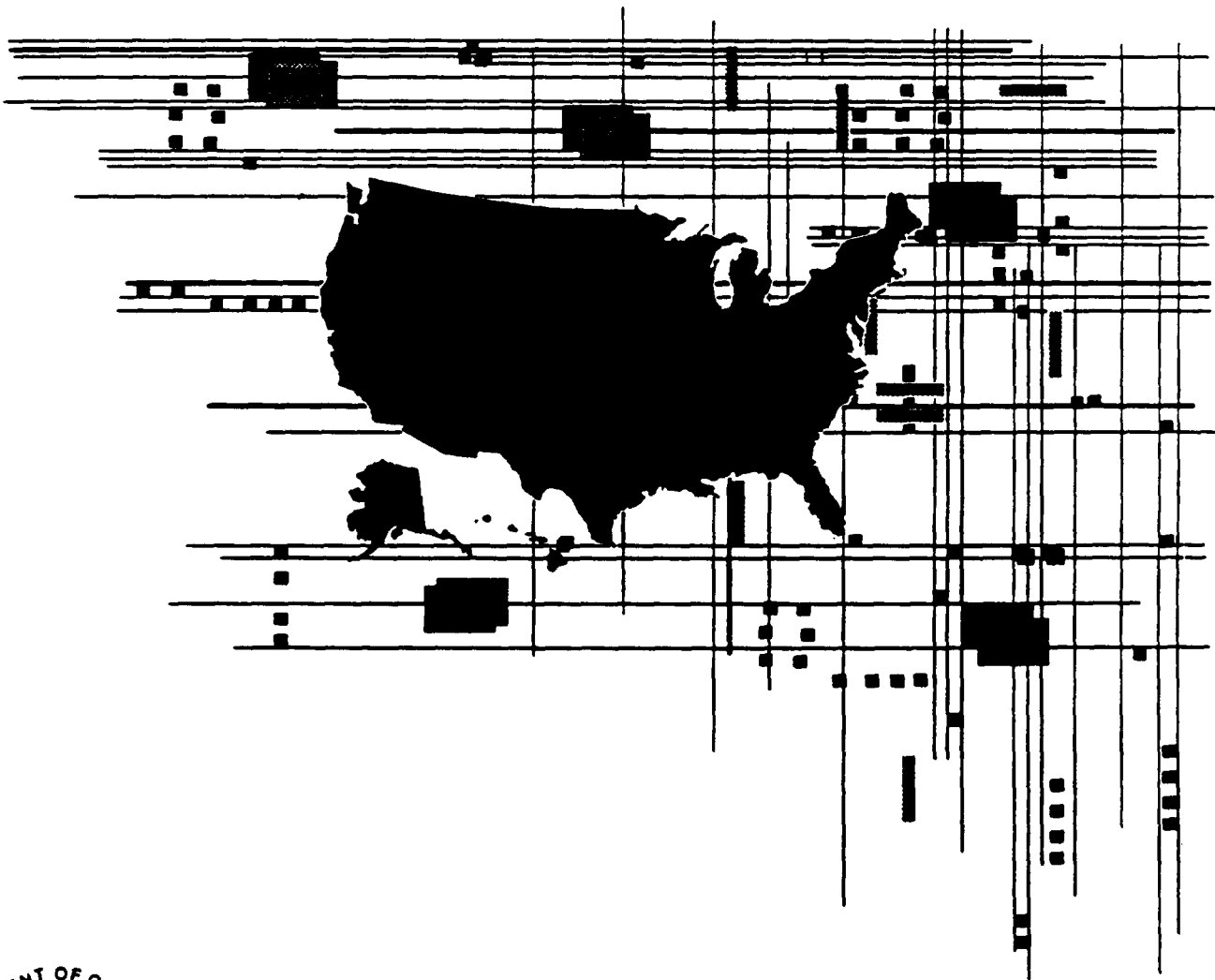
Mollusks

- Mussel, Cumberland bean pearly (Villosa (=Micromya) trabilis) - E

Roundstone Creek, Horselick  
 Creek, Buck Creek; Little  
 S. Fork Cumberland,  
 Rockcastle and Middle Fork  
 Rockcastle Rivers

# Estimates of Households, for Counties: July 1, 1985

U.S. Census Bureau  
Regional Office  
(Nancy Olsen)  
(704) 371-6652





**BUREAU OF THE CENSUS**

**John G. Keane, Director**

**C.L. Kincannon, Deputy Director**

**William P. Butz, Associate Director for  
Demographic Fields**

**Roger A. Herriot, Senior Demographic and  
Housing Analyst**

**POPULATION DIVISION**

**Paula J. Schneider, Chief**

---

**SUGGESTED CITATION**

**U.S. Bureau of the Census, Current Population Reports, Series P-23, No. 158,  
*Estimates of Households, for Counties: July 1, 1985,*  
U.S. Government Printing Office, Washington, D.C., 1988.**

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**For sale by Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.**

le 1. Estimates of Households, for Counties: July 1, 1985—Continued

ash (-) represents zero or rounds to zero. Estimates are consistent with special censuses since 1980. Corrections to 1980 census counts not included. See text concerning rounding and average population per household)

City and county	Households				Average population per household		Population			
	July 1, 1985 (estimate)	April 1, 1980 (census)	Change, 1980-85		July 1, 1985 (estimate)	April 1, 1980 (census)	July 1, 1985 (estimate)	April 1, 1980 (census)	Change, 1980-85	
			Number	Percent					Number	Percent
Kentucky—Continued										
Adair	7,400	6,821	600	9.0	3.14	3.31	23,600	22,752	900	3.9
Adams	3,600	3,259	300	9.5	2.75	2.86	9,800	9,321	500	5.5
Adelphi	3,500	3,466	-	1.3	2.53	2.63	9,000	9,207	-200	-2.4
Adrian	2,700	2,671	100	2.3	2.72	2.70	7,500	7,289	200	3.0
Adrian	32,600	30,208	2,300	7.8	2.65	2.79	87,800	85,949	1,800	2.1
Adrian	4,000	3,357	600	19.2	2.79	2.92	11,300	9,962	1,400	13.7
Adrian	2,200	2,223	-	0.9	3.00	3.11	6,700	6,908	-200	-2.6
Adrian	5,200	4,896	300	6.7	2.86	2.94	15,000	14,495	600	3.8
Adrian	83,600	75,440	8,200	10.8	2.40	2.56	212,100	204,165	7,900	3.9
Adrian	4,600	4,311	200	5.7	2.70	2.83	12,400	12,323	100	0.9
Adrian	17,200	15,973	1,200	7.8	2.94	3.04	50,800	48,764	2,100	4.2
Adrian	17,100	15,681	1,400	9.2	2.48	2.58	43,900	41,830	2,100	4.9
Adrian	3,100	3,384	-300	-8.2	2.57	2.61	8,100	8,971	-900	-9.7
Adrian	1,600	1,649	-	-0.1	2.96	2.93	4,900	4,842	-	0.9
Adrian	4,200	3,940	300	6.6	2.74	2.73	11,600	10,853	700	6.9
Adrian	4,700	4,422	300	7.0	2.93	2.97	14,100	13,308	800	5.9
Adrian	12,800	12,775	100	0.4	2.53	2.63	32,900	34,049	-1,100	-3.3
Adrian	7,600	7,228	300	4.6	2.82	2.86	21,500	20,854	700	3.1
Adrian	4,100	3,982	100	1.8	2.64	2.73	10,900	11,043	-200	-1.6
Adrian	13,100	12,926	200	1.4	2.90	3.01	38,200	39,132	-900	-2.3
Adrian	2,800	2,552	200	8.3	2.89	3.00	8,100	7,742	300	4.1
Adrian	27,600	24,610	3,000	12.3	2.79	2.98	92,300	88,917	3,400	3.8
Adrian	14,300	13,849	500	3.3	2.94	3.01	42,400	41,889	500	1.1
Adrian	5,900	5,461	500	8.4	2.61	2.74	15,700	15,166	500	3.3
Adrian	5,900	5,435	500	9.2	2.75	2.83	16,400	15,402	1,000	6.3
Adrian	15,800	14,688	1,100	7.3	2.66	2.75	42,500	40,849	1,600	4.0
Adrian	4,900	4,564	400	7.8	2.69	2.77	13,300	12,740	600	4.7
Adrian	2,200	2,229	-	-1.3	2.56	2.67	5,700	6,066	-300	-5.3
Adrian	17,500	16,552	900	5.7	2.62	2.74	46,700	46,174	500	1.1
Adrian	4,200	4,029	100	3.6	2.99	2.97	12,500	11,996	500	3.9
Adrian	264,000	250,569	13,400	5.4	2.55	2.69	683,600	685,004	-1,400	-0.2
Adrian	9,900	8,413	1,500	17.8	2.77	2.95	28,600	26,146	2,400	9.4
Adrian	8,800	8,195	600	7.5	2.88	2.94	25,700	24,432	1,300	5.2
Adrian	50,500	48,062	2,400	5.1	2.68	2.82	137,000	137,058	-100	-
Adrian	5,700	5,461	200	4.2	3.17	3.23	18,400	17,940	500	2.6
Adrian	10,300	9,946	400	4.1	2.89	3.01	30,200	30,239	-	-0.1
Adrian	4,500	4,268	200	4.5	2.77	2.78	12,400	11,922	500	4.3
Adrian	14,300	12,817	1,500	11.6	2.89	3.02	41,800	38,982	2,800	7.2
Adrian	4,900	4,662	200	4.1	3.01	3.01	14,700	14,121	600	4.2
Adrian	2,800	2,632	200	6.4	2.82	2.91	8,000	7,754	200	3.1
Adrian	4,900	4,569	400	7.8	3.10	3.25	15,300	14,882	400	3.0
Adrian	10,000	10,007	-	-0.1	3.01	3.06	30,200	30,687	-500	-1.5
Adrian	4,800	4,669	100	2.2	2.97	3.09	14,300	14,545	-300	-1.7
Adrian	6,800	6,521	200	3.6	2.83	2.91	19,200	19,053	100	0.7
Adrian	3,600	3,418	200	6.2	2.48	2.67	9,100	9,219	-100	-1.3
Adrian	9,400	8,548	900	10.1	2.72	2.80	25,800	24,138	1,700	7.0
Adrian	2,200	2,211	-	0.1	2.47	2.51	6,400	6,490	-100	-0.8
Adrian	24,100	23,459	600	2.6	2.49	2.58	60,800	61,310	-500	-0.8
Adrian	5,400	4,853	500	10.3	3.01	3.16	16,500	15,634	900	5.5
Adrian	3,700	3,671	100	1.8	2.63	2.72	9,900	10,090	-100	-1.4
Adrian	18,400	16,809	1,600	9.2	2.57	2.73	54,500	53,352	1,200	2.2
Adrian	4,600	4,151	400	10.2	3.10	3.24	14,300	13,515	700	5.5
Adrian	5,900	5,599	300	6.0	2.95	3.14	17,800	17,910	-100	-0.5
Adrian	9,900	9,427	500	5.1	2.57	2.68	25,900	25,637	200	0.9
Adrian	4,300	4,182	100	3.4	3.30	3.33	14,300	13,925	400	2.6
Adrian	6,300	6,361	-	-0.4	2.69	2.77	17,200	17,765	-600	-3.2

COVERAG  
=====

REFERENCE # 29

STATE	COUNTY	STATE NAME	COUNTY NAME
18	43	Indiana	Floyd Co
21	29	Kentucky	Bullitt Co
21	111	Kentucky	Jefferson Co

CENTER POINT AT STATE : 21 Kentucky  
COUNTY : 111 Jefferson Co

Press RETURN key to continue...

REGION OF THE COUNTRY  
=====

Zipcode found: 40221 at a distance of 3.1 Km

STATE	CITY NAME	COMMUNITY	FIPSCODE	LATITUDE	LONGITUDE
-----	-----	-----	-----	-----	-----
KY	LOUISVILLE	STANDIFORD	21111	38.1767	85.7400

Press RETURN key to continue ...

CENSUS DATA  
=====

KENTUCKY PETROLEUM PRODUCTS

LATITUDE 38: 8:57 LONGITUDE 85:44: 8 1980 POPULATION

KM	0.00-.400	.400-.810	.810-1.60	1.60-3.20	3.20-4.80	4.80-6.40	SECTOR TOTALS
S 1	0	0	0	1104	1429	10919	13452
S 2	0	0	0	4802	7405	8076	20283
S 3	0	0	0	632	7225	11709	19566
S 4	0	0	0	4626	6378	1746	12750
S 5	0	0	0	0	1713	1636	3349
S 6	0	0	0	2919	1855	5406	10180
S 7	0	0	0	3534	4410	1720	9664
S 8	0	0	0	2556	12355	18355	33266
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RING	0	0	0	20173	42770	59567	122510
TOTALS							

Press RETURN key to continue ...

STAR STATION  
=====

INDEX NUMBER	STATION NAME	LATITUDE DEGREE	LONGITUDE DEGREE	PERIOD OF RECORD	STABILITY CLASSES	DISTANCE (km)
93821	LOUISVILLE/STANDIFOR	38.1833	85.7333			6 3.80
13807	FT KNOX/GODMAN KY	37.9000	85.9667			6 34.29
93820	LEXINGTON/BLUE GRASS	38.0333	84.6000			6100.12
93814	COVINGTON/GTR CINN K	39.0667	84.6667			6137.84
93808	BOWLING GREEN/CITY-C	36.9667	86.4333			6145.03
93817	EVANSVILLE/DRESS IN	38.0500	87.5333			6157.55
93819	INDIANAPOLIS/WEIR CO	39.7333	86.2833			6182.24

Press RETURN key to continue ...

# U.S. SOIL DATA =====

STATE : KENTUCKY

LATITUDE : 38: 8:57      LONGITUDE : 85:44: 8  
THE STATION IS INSIDE H.U.      5140102

GROUND WATER ZONE	:	7			
RUNOFF SOIL TYPE	:	3			
EROSION	:	4.7060E-03			CM/MONTH
DEPTH TO GROUND WATER BETWEEN	:	0.0000E+00	AND	1.0000E+02	
FIELD CAPACITY FOR TOP SOIL	:	8.0000E-02			
EFFECTIVE POROSITY BETWEEN	:	1.0000E-02	AND	1.0000E-01	
SEEPAGE TO GROUNDWATER BETWEEN	:	2.7800E+02	AND	2.7800E+03	CM/MONTH
DISTANCE TO DRINKING WELL	:	2.5000E+04			CM

Press RETURN key to continue ...

# U.S. CITY =====

STATE	PLACE NAME	FIPSCODE	LATITUDE	LONGITUDE
-----	-----	-----	-----	-----
KY	FAIRDALE	21111	38.1050	85.7600

Press RETURN key to continue ...

MENU: Geodata Handling Data List procedures

- |  |            |
|--|------------|
| 1. Site level retrieval of data        | (SITERET)  |
| 2. Access Census Data                  | (CENSUS)   |
| 3. Determine County Coverage           | (COVERAGE) |
| 4. Geographic Data Management          | (GEODM)    |
| 5. HUCODE/SOIL locator                 | (HUCODE)   |
| 6. Convert to Lat/Long                 | (LATLON)   |
| 7. Lookup/Examine Star Station Data    | (STAR)     |
| 8. Find US cities                      | (USCITY)   |
| 9. Find Soil Survey Status of Counties | (SSURVEY)  |

Enter an option number or a procedure name (in parentheses)

or a command: HELP, HELP option, BACK, CLEAR, EXIT, TUTOR  
GEMS>

Enter an option number or a procedure name (in parentheses)  
or a command: HELP, HELP option, BACK, CLEAR, EXIT, TUTOR  
GEMS>

Enter an option number or a procedure name (in parentheses)  
or a command: HELP, HELP option, BACK, CLEAR, EXIT, TUTOR  
GEMS> EXIT

Type YES to confirm the EXIT command; type NO to restart GEMS  
GEMS> YES

\$

\$ LOGOUT

WRT logged out at 28-SEP-1990 14:42:08.70

Itemized resource charges, for this session, follow:

NODE: VAXTM1

ACCT: NTIS

PROJ: NTISNUCN

USER: WRT

UIC: [000750,000112]

BAUD:

START TIME: 28-SEP-1990 14:37:53.54

FINISH TIME: 28-SEP-1990 14:42:08.70

BILLING PERIOD:900901

WEEKDAY: FRIDAY

TERMINAL PORT: TXA6

DESCRIPTION OF CHARGE	QUANTITY	EXPENDITURE
-----------------------	----------	-------------

ALL CHARGE LEVELS

300 baud	(Seconds)	255	0.6910
CPU TIME	(Seconds)	6	0.4300

TOTAL FOR THIS SESSION

\$ 1.1210

NODE 3157 HOST 1038: DROPPED BY HOST  
please log in: X

password:



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IV

345 COURTLAND STREET, N.E.  
ATLANTA, GEORGIA 30365

2657

4WEPB 1991  
SEP 6

Mr. Carl Millanti  
Uncontrolled Sites Branch  
Kentucky Department for  
Environmental Protection  
18 Reilly Road  
Frankfort, Kentucky 40601

Dear Mr. Millanti:

This letter serves to inform you of EPA's decision regarding the disposition of sites under investigation in Kentucky. The following is a list of sites which were investigated and their respective dispositions:

1. Sun Oil Company - Camp Breckinridge  
EPA ID No. KYD991276403  
SSI Phase 1 Report - FIT Lead - Concur with recommendation for NFRAP due to lack of targets.
2. Sandgap Dump  
EPA ID No. KYD980501332  
SSI Phase 1 Report - FIT Lead - Concur with recommendation for NFRAP due to lack of targets.
3. Tartar Farm  
EPA ID No. KYD985066471  
PA Report - State Lead - Do not concur with State recommendation for NFRAP; additional environmental sampling is necessary to fully evaluate effect of earlier removal action. Monitoring well sampling continues to detect low levels of volatile organic compounds in the groundwater.
4. Kentucky Petroleum Products  
EPA ID No. KYD061564001  
SSI Phase 1 Report - FIT Lead - Concur with recommendation for NFRAP due to lack of targets.
5. Bramer's Landfill  
EPA ID No. KYD980728851  
SSI Phase 2 Report - FIT Lead - Concur with recommendation for NFRAP due to lack of targets and small amount of contamination.



- 2 -

I have also enclosed a copy of the respective reports for your files. If you should have any questions, please feel free to contact me at (404) 347-5065.

Sincerely yours,

Craig A. Benedikt  
Environmental Scientist

cc: Ramona Klein

Enclosure

CB:cb:DOC MILLANTI:DISK BENEDIKT #3:09/05/91:X5065

4WD-SAS

4WD-SAS

BENEDIKT

DEIHL

KYDOG1564001

Kentucky Petroleum Prods  
14019 Blanton Rd  
Louisville Ky

Jeff City

~~Ward~~



POTENTIAL HAZARDOUS WASTE SITE  
IDENTIFICATION AND PRELIMINARY ASSESSMENT

REGION SITE NUMBER (to be assigned by HQ)

IV

KY 000000 ZC  
30

NOTE: This form is completed for each potential hazardous waste site to help set priorities for site inspection. The information submitted on this form is based on available records and may be updated on subsequent forms as a result of additional inquiries and on-site inspections.

GENERAL INSTRUCTIONS: Complete Sections I and III through X as completely as possible before Section II (Preliminary Assessment). File this form in the Regional Hazardous Waste Log File and submit a copy to: U.S. Environmental Protection Agency; Site Tracking System; Hazardous Waste Enforcement Task Force (EN-335); 401 M St., SW; Washington, DC 20460.

I. SITE IDENTIFICATION

A. SITE NAME Kentucky Petroleum Products Co.		B. STREET (or other identifier) 4019 Blanton Lane	
C. CITY Louisville	D. STATE KY	E. ZIP CODE 40216	F. COUNTY NAME Jefferson
G. OWNER/OPERATOR (If known) 1. NAME Same		2. TELEPHONE NUMBER (502)447-1802	
H. TYPE OF OWNERSHIP <input type="checkbox"/> 1. FEDERAL <input type="checkbox"/> 2. STATE <input type="checkbox"/> 3. COUNTY <input type="checkbox"/> 4. MUNICIPAL <input checked="" type="checkbox"/> 5. PRIVATE <input type="checkbox"/> 6. UNKNOWN			
I. SITE DESCRIPTION This is a facility which reclaims waste oil, separates out sludge and water, and sellsoil to a reprocessor. Facility consists of about 15 tanks and a oil water separator.			
J. HOW IDENTIFIED (i.e., citizen's complaints, OSHA citations, etc.) Eckhardt Report			K. DATE IDENTIFIED (mo., day, & yr.)
L. PRINCIPAL STATE CONTACT 1. NAME Pat Haight		2. TELEPHONE NUMBER (502)564-6716	

II. PRELIMINARY ASSESSMENT (complete this section last)

A. APPARENT SERIOUSNESS OF PROBLEM <input type="checkbox"/> 1. HIGH <input type="checkbox"/> 2. MEDIUM <input checked="" type="checkbox"/> 3. LOW <input type="checkbox"/> 4. NONE <input type="checkbox"/> 5. UNKNOWN		
B. RECOMMENDATION <input checked="" type="checkbox"/> 1. NO ACTION NEEDED (no hazard) <input type="checkbox"/> 2. IMMEDIATE SITE INSPECTION NEEDED a. TENTATIVELY SCHEDULED FOR: _____ b. WILL BE PERFORMED BY: _____ <input type="checkbox"/> 3. SITE INSPECTION NEEDED a. TENTATIVELY SCHEDULED FOR: _____ b. WILL BE PERFORMED BY: _____ <input type="checkbox"/> 4. SITE INSPECTION NEEDED (low priority)		
C. PREPARER INFORMATION 1. NAME Carl Horneman	2. TELEPHONE NUMBER (502)588-4254	3. DATE (mo., day, & yr.) 2-27-80

III. SITE INFORMATION

A. SITE STATUS <input checked="" type="checkbox"/> 1. ACTIVE (Those industrial or municipal sites which are being used for waste treatment, storage, or disposal or a continuing basis, even if infrequently.) <input type="checkbox"/> 2. INACTIVE (Those sites which no longer receive wastes.) <input type="checkbox"/> 3. OTHER (specify): _____ (Those sites that include such incidents like "midnight dumping" where no regular or continuing use of the site for waste disposal has occurred.)	B. IS GENERATOR ON SITE? <input type="checkbox"/> 1. NO <input checked="" type="checkbox"/> 2. YES (specify generator's four-digit SIC Code): _____
C. AREA OF SITE (in acres) (Problem) 1 acre	D. IF APPARENT SERIOUSNESS OF SITE IS HIGH, SPECIFY COORDINATES 1. LATITUDE (deg.-min.-sec.) 2. LONGITUDE (deg.-min.-sec.)
E. ARE THERE BUILDINGS ON THE SITE? (if in problem area) <input type="checkbox"/> 1. NO <input checked="" type="checkbox"/> 2. YES (specify): Pump house	

## IV. CHARACTERIZATION OF SITE ACTIVITY

Indicate the major site activity(ies) and details relating to each activity by marking 'X' in the appropriate boxes.

<input checked="" type="checkbox"/> A. TRANSPORTER	<input checked="" type="checkbox"/> B. STORER	<input checked="" type="checkbox"/> C. TREATER	<input checked="" type="checkbox"/> D. DISPOSER
1. RAIL	1. PILE	1. FILTRATION	1. LANDFILL
2. SHIP	2. SURFACE IMPOUNDMENT	2. INCINERATION	2. LANDFARM
3. BARGE	3. DRUMS	3. VOLUME REDUCTION	3. OPEN DUMP
<input checked="" type="checkbox"/> 4. TRUCK	4. TANK ABOVE GROUND	<input checked="" type="checkbox"/> 4. RECYCLING/RECOVERY	4. SURFACE IMPOUNDMENT
5. PIPELINE	5. TANK BELOW GROUND	5. CHEM./PHYS. TREATMENT	5. MIDDY DUMPING
6. OTHER (specify):	6. OTHER (specify):	6. BIOLOGICAL TREATMENT	6. INCINERATION
		7. WASTE OIL REPROCESSING	7. UNDERGROUND INJECTION
		8. SOLVENT RECOVERY	8. OTHER (specify):
		9. OTHER (specify):	

E. SPECIFY DETAILS OF SITE ACTIVITIES AS NEEDED

## V. WASTE RELATED INFORMATION

## A. WASTE TYPE

☐ 1. UNKNOWN    ☒ 2. LIQUID    ☐ 3. SOLID    ☐ 4. SLUDGE    ☐ 5. GAS

## B. WASTE CHARACTERISTICS

☐ 1. UNKNOWN    ☐ 2. CORROSIVE    ☐ 3. IGNITABLE    ☐ 4. RADIOACTIVE    ☐ 5. HIGHLY VOLATILE  
☐ 6. TOXIC    ☐ 7. REACTIVE    ☐ 8. INERT    ☒ 9. FLAMMABLE
☐ 10. OTHER (specify):

## C. WASTE CATEGORIES

1. Are records of wastes available? Specify items such as manifests, inventories, etc. below.

No

2. Estimate the amount (specify unit of measure) of waste by category; mark 'X' to indicate which wastes are present.

a. SLUDGE	b. OIL	c. SOLVENTS	d. CHEMICALS	e. SOLIDS	f. OTHER
AMOUNT	AMOUNT	AMOUNT	AMOUNT	AMOUNT	AMOUNT
UNIT OF MEASURE	UNIT OF MEASURE	UNIT OF MEASURE	UNIT OF MEASURE	UNIT OF MEASURE	UNIT OF MEASURE
<input checked="" type="checkbox"/> (1) PAINT, PIGMENTS	<input checked="" type="checkbox"/> (1) OILY WASTES	<input checked="" type="checkbox"/> (1) HALOGENATED SOLVENTS	<input checked="" type="checkbox"/> (1) ACIDS	<input checked="" type="checkbox"/> (1) FLYASH	<input checked="" type="checkbox"/> (1) LABORATORY PHARMACEUT.
(2) METALS SLUDGES	(2) OTHER (specify):	(2) NON-HALOGENATED SOLVENTS	(2) PICKLING LIQUORS	(2) ASBESTOS	(2) HOSPITAL
(3) PCW		(3) OTHER (specify):	(3) CAUSTICS	(3) MILLING/MINE TAILINGS	(3) RADIOACTIVE
(4) ALUMINUM SLUDGE			(4) PESTICIDES	(4) FERROUS SMELTING WASTES	(4) MUNICIPAL
(5) OTHER (specify):			(5) DYES/INKS	(5) NON-FERROUS SMELTING WASTES	(5) OTHER (specify):
			(6) CYANIDE	(6) OTHER (specify):	
			(7) PHENOLS		
			(8) HALOGENS		
			(9) PCB		
			(10) METALS		
			(11) OTHER (specify):		

No quantity figures were obtained.

## V. WASTE RELATED INFORMATION (continued)

3. LIST SUBSTANCES OF GREATEST CONCERN WHICH MAY BE ON THE SITE (place in descending order of hazard).

None

4. ADDITIONAL COMMENTS OR NARRATIVE DESCRIPTION OF SITUATION KNOWN OR REPORTED TO EXIST AT THE SITE.

## VI. HAZARD DESCRIPTION

A. TYPE OF HAZARD	B. POTENTIAL HAZARD (mark 'X')	C. ALLEGED INCIDENT (mark 'X')	D. DATE OF INCIDENT (mo., da., yr.)	E. REMARKS
1. NO HAZARD				
2. HUMAN HEALTH				
3. NON-WORKER INJURY/EXPOSURE				
4. WORKER INJURY				
5. CONTAMINATION OF WATER SUPPLY				
6. CONTAMINATION OF FOOD CHAIN				
7. CONTAMINATION OF GROUND WATER				
8. CONTAMINATION OF SURFACE WATER	X			Steps are being taken to prevent possibility of spills (dike).
9. DAMAGE TO FLORA/FAUNA				
10. FISH KILL				
11. CONTAMINATION OF AIR				
12. NOTICEABLE ODORS				
13. CONTAMINATION OF SOIL				
14. PROPERTY DAMAGE				
15. FIRE OR EXPLOSION				
16. SPILLS/LEAKING CONTAINERS/ RUNOFF/STANDING LIQUIDS				
17. SEWER, STORM DRAIN PROBLEMS				
18. EROSION PROBLEMS				
19. INADEQUATE SECURITY				
20. INCOMPATIBLE WASTES				
21. MIDNIGHT DUMPING				
22. OTHER (specify):				

# VII. PERMIT INFORMATION

A. INDICATE ALL APPLICABLE PERMITS HELD BY THE SITE.

- ☐ 1. NPDES PERMIT ☐ 2. SPCC PLAN ☐ 3. STATE PERMIT (specify) \_\_\_\_\_
- ☐ 4. AIR PERMITS ☐ 5. LOCAL PERMIT ☐ 6. RCRA TRANSPORTER \_\_\_\_\_
- ☐ 7. RCRA STORER ☐ 8. RCRA TREATER ☐ 9. RCRA DISPOSER \_\_\_\_\_
- ☐ 10. OTHER (specify): \_\_\_\_\_

B. IN COMPLIANCE?

- ☒ 1. YES ☐ 2. NO ☐ 3. UNKNOWN

4. WITH RESPECT TO (list regulation name & number): \_\_\_\_\_

# VIII. PAST REGULATORY ACTIONS

- ☒ A. NONE ☐ B. YES (summarize below): \_\_\_\_\_

# IX. INSPECTION ACTIVITY (past or on-going)

- ☐ A. NONE ☒ B. YES (complete items 1, 2, 3, & 4 below)

1. TYPE OF ACTIVITY	2. DATE OF PAST ACTION (mo., day, & yr.)	3. PERFORMED BY: (EPA/State)	4. DESCRIPTION
Inspection	2-27-80	State	Permit application for storage facility and CWA spec plan being prepared.

# X. REMEDIAL ACTIVITY (past or on-going)

- ☒ A. NONE ☐ B. YES (complete items 1, 2, 3, & 4 below)

1. TYPE OF ACTIVITY	2. DATE OF PAST ACTION (mo., day, & yr.)	3. PERFORMED BY: (EPA/State)	4. DESCRIPTION

NOTE: Based on the information in Sections III through X, fill out the Preliminary Assessment (Section II) information on the first page of this form.



POTENTIAL HAZARDOUS WASTE SITE  
SITE INSPECTION REPORT

REGION IV SITE NUMBER (to be assigned by HQ) KY000000220

**GENERAL INSTRUCTIONS:** Complete Sections I and III through XV of this form as completely as possible. Then use the information on this form to develop a Tentative Disposition (Section II). File this form in its entirety in the regional Hazardous Waste Log File. Be sure to include all appropriate Supplemental Reports in the file. Submit a copy of the forms to: U.S. Environmental Protection Agency; Site Tracking System; Hazardous Waste Enforcement Task Force (EN-335); 401 M St., SW; Washington, DC 20460.

I. SITE IDENTIFICATION

A. SITE NAME KY Petroleum Prod.		B. STREET (or other identifier) 4019 Blanton Lane	
C. CITY Louisville	D. STATE KY	E. ZIP CODE 40216	F. COUNTY NAME Jefferson
G. SITE OPERATOR INFORMATION		2. TELEPHONE NUMBER	
1. NAME Leo Shireliff - operator			
3. STREET	4. CITY	5. STATE	6. ZIP CODE
H. REALTY OWNER INFORMATION (if different from operator of site)		2. TELEPHONE NUMBER	
1. NAME			
3. CITY	4. STATE	5. ZIP CODE	
I. SITE DESCRIPTION Waste oil recycler - Above ground storage w/ containment			
J. TYPE OF OWNERSHIP			
<input type="checkbox"/> 1. FEDERAL <input type="checkbox"/> 2. STATE <input type="checkbox"/> 3. COUNTY <input type="checkbox"/> 4. MUNICIPAL <input checked="" type="checkbox"/> 5. PRIVATE			

II. TENTATIVE DISPOSITION (complete this section last)

A. ESTIMATE DATE OF TENTATIVE DISPOSITION (mo., day, & yr.) 11/17/80	B. APPARENT SERIOUSNESS OF PROBLEM
	<input type="checkbox"/> 1. HIGH <input type="checkbox"/> 2. MEDIUM <input type="checkbox"/> 3. LOW <input checked="" type="checkbox"/> 4. NONE
C. PREPARER INFORMATION	
1. NAME A. Shane Hitchcock	2. TELEPHONE NUMBER 404/881-2234
3. DATE (mo., day, & yr.) 11/18/80	

III. INSPECTION INFORMATION

A. PRINCIPAL INSPECTOR INFORMATION	
1. NAME A. Shane Hitchcock	2. TITLE Env. Scientist
3. ORGANIZATION US-EPA	4. TELEPHONE NO. (area code & no.) 404/881-2234

B. INSPECTION PARTICIPANTS		
1. NAME	2. ORGANIZATION	3. TELEPHONE NO.
Bob Koentop	KY-DNREP-D.V.-HMWM	502/588-4254

C. SITE REPRESENTATIVES INTERVIEWED (corporate officials, workers, residents)		
1. NAME	2. TITLE & TELEPHONE NO.	3. ADDRESS

## IV. INSPECTION INFORMATION (continued)

## D. GENERATOR INFORMATION (sources of waste)

1. NAME	2. TELEPHONE NO.	3. ADDRESS	4. WASTE TYPE GENERATED

## E. TRANSPORTER/HAULER INFORMATION

1. NAME	2. TELEPHONE NO.	3. ADDRESS	4. WASTE TYPE TRANSPORTED

## F. IF WASTE IS PROCESSED ON SITE AND ALSO SHIPPED TO OTHER SITES, IDENTIFY OFF-SITE FACILITIES USED FOR DISPOSAL.

1. NAME	2. TELEPHONE NO.	3. ADDRESS

G. DATE OF INSPECTION  
(mo., day, & yr.)

11/17/80

H. TIME OF INSPECTION

I. ACCESS GAINED BY: (credentials must be shown in all cases)

☐

1. PERMISSION

☐

2. WARRANT

J. WEATHER (describe)

## IV. SAMPLING INFORMATION

A. Mark 'X' for the types of samples taken and indicate where they have been sent e.g., regional lab, other EPA lab, contractor, etc. and estimate when the results will be available.

1. SAMPLE TYPE	2. SAMPLE TAKEN (mark 'X')	3. SAMPLE SENT TO:	4. DATE RESULTS AVAILABLE
a. GROUNDWATER			
b. SURFACE WATER			
c. WASTE			
d. AIR			
e. RUNOFF			
f. SPILL			
g. SOIL			
h. VEGETATION			
i. OTHER (specify)			

## B. FIELD MEASUREMENTS TAKEN (e.g., radioactivity, explosivity, PH, etc.)

1. TYPE	2. LOCATION OF MEASUREMENTS	3. RESULTS



## IV. SAMPLING INFORMATION (continued)

## C. PHOTOS

1. TYPE OF PHOTOS

☐ a. GROUND ☐ b. AERIAL

2. PHOTOS IN CUSTODY OF:

## D. SITE MAPPED?

☐ YES. SPECIFY LOCATION OF MAPS:

## E. COORDINATES

1. LATITUDE (deg.-min.-sec.)

2. LONGITUDE (deg.-min.-sec.)

## V. SITE INFORMATION

## A. SITE STATUS

☒ 1. ACTIVE (Those industrial or municipal sites which are being used for waste treatment, storage, or disposal on a continuing basis, even if infrequently.)☐ 2. INACTIVE (Those sites which no longer receive wastes.)☐ 3. OTHER (specify):  
(Those sites that include such incidents like "midnight dumping" where no regular or continuing use of the site for waste disposal has occurred.)

## B. IS GENERATOR ON SITE?

☒ 1. NO ☐ 2. YES (specify generator's four-digit SIC Code):

## C. AREA OF SITE (in acres)

~ 5 acres

## D. ARE THERE BUILDINGS ON THE SITE?

☒ 1. NO ☐ 2. YES (specify):

## VI. CHARACTERIZATION OF SITE ACTIVITY

Indicate the major site activity(ies) and details relating to each activity by marking 'X' in the appropriate boxes.

X	A. TRANSPORTER	X	B. STORER	X	C. TREATER	X	D. DISPOSER
	1. RAIL		1. PILE		1. FILTRATION		1. LANDFILL
	2. SHIP		2. SURFACE IMPOUNDMENT		2. INCINERATION		2. LANDFARM
	3. BARGE		3. DRUMS		3. VOLUME REDUCTION		3. OPEN DUMP
	4. TRUCK		4. TANK, ABOVE GROUND		4. RECYCLING/RECOVERY		4. SURFACE IMPOUNDMENT
	5. PIPELINE		5. TANK, BELOW GROUND		5. CHEM./PHYS./TREATMENT		5. MIDNIGHT DUMPING
	6. OTHER (specify):		6. OTHER (specify):		6. BIOLOGICAL TREATMENT		6. INCINERATION
					7. WASTE OIL REPROCESSING		7. UNDERGROUND INJECTION
					8. SOLVENT RECOVERY		8. OTHER (specify):
					9. OTHER (specify):		

E. SUPPLEMENTAL REPORTS: If the site falls within any of the categories listed below, Supplemental Reports must be completed. Indicate which Supplemental Reports you have filled out and attached to this for..

- ☐ 1. STORAGE ☐ 2. INCINERATION ☐ 3. LANDFILL ☐ 4. SURFACE IMPOUNDMENT ☐ 5. DEEP WELL  
☐ 6. CHEM/BIO/PHYS TREATMENT ☐ 7. LANDFARM ☐ 8. OPEN DUMP ☐ 9. TRANSPORTER ☐ 10. RECYCLOR/RECLAIMER

## VII. WASTE RELATED INFORMATION

## A. WASTE TYPE

☒ 1. LIQUID ☐ 2. SOLID ☐ 3. SLUDGE ☐ 4. GAS

## B. WASTE CHARACTERISTICS

☐ 1. CORROSIVE ☐ 2. IGNITABLE ☐ 3. RADIOACTIVE ☐ 4. HIGHLY VOLATILE  
☐ 5. TOXIC ☐ 6. REACTIVE ☐ 7. INERT ☐ 8. FLAMMABLE

☐ 9. OTHER (specify):

## C. WASTE CATEGORIES

1. Are records of wastes available? Specify items such as manifests, inventories, etc. below.

Waste Oil

## VII. WASTE RELATED INFORMATION (continued)

2. Estimate the amount (specify unit of measure) of waste by category; mark 'X' to indicate which wastes are present.

a. SLUDGE		b. OIL		c. SOLVENTS		d. CHEMICALS		e. SOLIDS		f. OTHER	
AMOUNT		AMOUNT		AMOUNT		AMOUNT		AMOUNT		AMOUNT	
UNIT OF MEASURE		UNIT OF MEASURE		UNIT OF MEASURE		UNIT OF MEASURE		UNIT OF MEASURE		UNIT OF MEASURE	
<input checked="" type="checkbox"/> (1) PAINT, PIGMENTS		<input checked="" type="checkbox"/> (1) OILY WASTES		<input checked="" type="checkbox"/> (1) HALOGENATED SOLVENTS		<input checked="" type="checkbox"/> (1) ACIDS		<input checked="" type="checkbox"/> (1) FLYASH		<input checked="" type="checkbox"/> (1) LABORATORY, PHARMACEUT.	
(2) METALS SLUDGES		(2) OTHER (specify):		(2) NON-HALOGNTD. SOLVENTS		(2) PICKLING LIQUORS		(2) ASBESTOS		(2) HOSPITAL	
(3) POTW			(3) OTHER (specify):		(3) CAUSTICS		(3) MILLING/MINE TAILINGS		(3) RADIOACTIVE		
(4) ALUMINUM SLUDGE				(4) PESTICIDES		(4) FERROUS SMELTING WASTES		(4) MUNICIPAL			
(5) OTHER (specify):				(5) DYES/INKS		(5) NON-FERROUS SMLTG. WASTES		(5) OTHER (specify):			
				(6) CYANIDE		(6) OTHER (specify):					
					(7) PHENOLS						
					(8) HALOGENS						
					(9) PCB						
					(10) METALS						
					(11) OTHER (specify):						

D. LIST SUBSTANCES OF GREATEST CONCERN WHICH ARE ON THE SITE (place in descending order of hazard)

1. SUBSTANCE	2. FORM (mark 'X')			3. TOXICITY (mark 'X')				4. CAS NUMBER	5. AMOUNT	6. UNIT
	a. SOLID	b. LIQ.	c. VA-POR	a. HIGH	b. MED.	c. LOW	d. NONE			

## VIII. HAZARD DESCRIPTION

FIELD EVALUATION HAZARD DESCRIPTION: Place an 'X' in the box to indicate that the listed hazard exists. Describe the hazard in the space provided.

☐ A. HUMAN HEALTH HAZARDS

**VIII. HAZARD DESCRIPTION** *(continued)*

☐ B. NON-WORKER INJURY/EXPOSURE

☐ C. WORKER INJURY/EXPOSURE

☐ D. CONTAMINATION OF WATER SUPPLY

☐ E. CONTAMINATION OF FOOD CHAIN

☐ F. CONTAMINATION OF GROUND WATER

☐ G. CONTAMINATION OF SURFACE WATER

## VIII. HAZARD DESCRIPTION (continued)

☐ H. DAMAGE TO FLORA/FAUNA☐ I. FISH KILL☐ J. CONTAMINATION OF AIR☐ K. NOTICEABLE ODORS☒ L. CONTAMINATION OF SOIL

This is a waste oil recycler that buys and sells waste oil. This facility is used as a transfer station. Soil is contaminated w/ oil in the immediate vicinity of the tanks but the ~~containment~~ contamination is confined to the area with the containment structures.

☐ M. PROPERTY DAMAGE

## VIII. HAZARD DESCRIPTION (continued)

☐ N. FIRE OR EXPLOSION☐ O. SPILLS/LEAKING CONTAINERS/RUNOFF/STANDING LIQUID☐ P. SEWER, STORM DRAIN PROBLEMS☐ Q. EROSION PROBLEMS☐ R. INADEQUATE SECURITY☐ S. INCOMPATIBLE WASTES

# **VIII. HAZARD DESCRIPTION (continued)**

☐ T. MIDNIGHT DUMPING

☐ U. OTHER (specify):

## **IX. POPULATION DIRECTLY AFFECTED BY SITE**

A. LOCATION OF POPULATION	B. APPROX. NO. OF PEOPLE AFFECTED	C. APPROX. NO. OF PEOPLE AFFECTED WITHIN UNIT AREA	D. APPROX. NO. OF BUILDINGS AFFECTED	E. DISTANCE TO SITE (specify units)
1. IN RESIDENTIAL AREAS				
2. IN COMMERCIAL OR INDUSTRIAL AREAS				
3. IN PUBLICLY TRAVELLED AREAS				
4. PUBLIC USE AREAS (parks, schools, etc.)				

## **X. WATER AND HYDROLOGICAL DATA**

A. DEPTH TO GROUNDWATER (specify unit)	B. DIRECTION OF FLOW	C. GROUNDWATER USE IN VICINITY
D. POTENTIAL YIELD OF AQUIFER	E. DISTANCE TO DRINKING WATER SUPPLY (specify unit of measure)	F. DIRECTION TO DRINKING WATER SUPPLY
G. TYPE OF DRINKING WATER SUPPLY		
<input type="checkbox"/> 1. NON-COMMUNITY < 15 CONNECTIONS* <input type="checkbox"/> 2. COMMUNITY (specify town): _____ > 15 CONNECTIONS		
<input type="checkbox"/> 3. SURFACE WATER <input type="checkbox"/> 4. WELL		

Continued From Page 8

### X. WATER AND HYDROLOGICAL DATA (continued)

H. LIST ALL DRINKING WATER WELLS WITHIN A 1/4 MILE RADIUS OF SITE

1. WELL	2. DEPTH (specify unit)	3. LOCATION (proximity to population/buildings)	4. NON-COM- MUNITY (mark 'X')	5. COMMUN- ITY (mark 'X')

I. RECEIVING WATER

1. NAME ☐ 2. SEWERS ☐ 3. STREAMS/RIVERS  
☐ 4. LAKES/RESERVOIRS ☐ 5. OTHER (specify): \_\_\_\_\_

6. SPECIFY USE AND CLASSIFICATION OF RECEIVING WATERS \_\_\_\_\_

### XI. SOIL AND VEGETATION DATA

LOCATION OF SITE IS IN:

☐ A. KNOWN FAULT ZONE ☐ B. KARST ZONE ☐ C. 100 YEAR FLOOD PLAIN ☐ D. WETLAND  
☐ E. A REGULATED FLOODWAY ☐ F. CRITICAL HABITAT ☐ G. RECHARGE ZONE OR SOLE SOURCE AQUIFER

### XII. TYPE OF GEOLOGICAL MATERIAL OBSERVED

Mark 'X' to indicate the type(s) of geological material observed and specify where necessary, the component parts.

'X'	A. COVERED BURDEN	'X'	B. BEDROCK (specify below)	'X'	C. OTHER (specify below)
	1. SAND				
	2. CLAY				
	3. GRAVEL				

### XIII. SOIL PERMEABILITY

☐ A. UNKNOWN ☐ B. VERY HIGH (100,000 to 1000 cm/sec.) ☐ C. HIGH (1000 to 10 cm/sec.)  
☐ D. MODERATE (10 to .1 cm/sec.) ☐ E. LOW (.1 to .001 cm/sec.) ☐ F. VERY LOW (.001 to .00001 cm/sec.)

G. RECHARGE AREA

☐ 1. YES ☐ 2. NO 3. COMMENTS: \_\_\_\_\_

H. DISCHARGE AREA

☐ 1. YES ☐ 2. NO 3. COMMENTS: \_\_\_\_\_

I. SLOPE

1. ESTIMATE % OF SLOPE 2. SPECIFY DIRECTION OF SLOPE, CONDITION OF SLOPE, ETC.

J. OTHER GEOLOGICAL DATA

**XIV. PERMIT INFORMATION**

List all applicable permits held by the site and provide the related information.

A. PERMIT TYPE (e.g., RCRA, State, NPDES, etc.)	B. ISSUING AGENCY	C. PERMIT NUMBER	D. DATE ISSUED (mo., day, & yr.)	E. EXPIRATION DATE (mo., day, & yr.)	F. IN COMPLIANCE (mark 'X')		
					1. YES	2. NO	3. UN- KNOWN

**XV. PAST REGULATORY OR ENFORCEMENT ACTIONS**
☐ NONE      ☐ YES (summarize in this space)

NOTE: Based on the information in Sections III through XV, fill out the Tentative Disposition (Section II) information on the first page of this form.



REGION: 04  
STATE : KY

U.S. ENVIRONMENTAL PROTECTION AGENCY  
OFFICE OF EMERGENCY AND REMEDIAL RESPONSE  
C E R C L I S V 1.2

PAGE: 73  
RUN DATE: 04/28/87  
RUN TIME: 08:16:12

M.2 - SITE MAINTENANCE FORM

		* ACTION: _	*
EPA ID : KYD061564001			
SITE NAME: KENTUCKY PETROLEUM PRODUCTS	SOURCE: S	* _	*
STREET : 4019 BLANTON LN	CONG DIST: 03	* _	*
CITY : LOUISVILLE	ZIP: 40216	* _	*
CNTY NAME: JEFFERSON	CNTY CODE : 111	* _	*
LATITUDE : 38/11/36.0	LONGITUDE : 085/48/30.0	* _/_/_.	*
LL-SOURCE: R	LL-ACCURACY:	* _	*
SMSA : 4520	HYDRO UNIT: 05140101	* _	*
INVENTORY IND: Y	REMEDIAL IND: Y	REMOVAL IND: N	FED FAC IND: N
NPL IND: N	NPL LISTING DATE:	NPL DELISTING DATE:	
SITE/SPILL IDS:			
RPM NAME:	RPM PHONE: - -		
SITE CLASSIFICATION:	SITE APPROACH:		
DIOXIN TIER:	REG FLD1:	REG FLD2:	
RESP TERM: PENDING ( )	NO FURTHER ACTION ( )		
ENF DISP: NO VIABLE RESP PARTY ( )	VOLUNTARY RESPONSE ( )		
ENFORCED RESPONSE ( )	COST RECOVERY ( )		
SITE DESCRIPTION:			
	* _		
	* _		
	* _		
	* _		

U.S. ENVIRONMENTAL PROTECTION AGENCY  
OFFICE OF EMERGENCY AND REMEDIAL RESPONSE  
C E R C L I S V 1.2

## M.2 - PROGRAM MAINTENANCE FORM

\* ACTION: -

**SITE: KENTUCKY PETROLEUM PRODUCTS**

EPA ID: KYD061564001      PROGRAM CODE: H01      PROGRAM TYPE:

PROGRAM QUALIFIER:            ALIAS LINK :

PROGRAM NAME: SITE EVALUATION

**DESCRIPTION:**

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

REGION: 04  
STATE : KY

U.S. ENVIRONMENTAL PROTECTION AGENCY  
OFFICE OF EMERGENCY AND REMEDIAL RESPONSE  
C E R C L I S V 1.2

PAGE: 75  
RUN DATE: 04/28/87  
RUN TIME: 08:16:12

M.2 - EVENT MAINTENANCE FORM

\* ACTION: \_

SITE: KENTUCKY PETROLEUM PRODUCTS  
PROGRAM: SITE EVALUATION

EPA ID: KYD061564001 PROGRAM CODE: H01

EVENT TYPE: DS1

FMS CODE: EVENT QUALIFIER :

EVENT LEAD: E

\* \_

EVENT NAME: DISCOVERY

STATUS:

\* \_

DESCRIPTION:

\* \_

\* \_

\* \_

\* \_

ORIGINAL

CURRENT

ACTUAL

START:

START:

START:

\* / /

/ /

/ /

COMP :

COMP :

COMP : 11/01/79

\* \_/\_/\_

\_/\_/\_

\_/\_/\_

HQ COMMENT:

\* \_

RG COMMENT:

\* \_

COOP AGR #

AMENDMENT #

STATUS

STATE %

0

\* \_

REGION: 04  
STATE : KY

U.S. ENVIRONMENTAL PROTECTION AGENCY  
OFFICE OF EMERGENCY AND REMEDIAL RESPONSE  
C E R C L I S V 1.2

PAGE: 76  
RUN DATE: 04/28/87  
RUN TIME: 08:16:12

M.2 - EVENT MAINTENANCE FORM

\* ACTION: \_

SITE: KENTUCKY PETROLEUM PRODUCTS  
PROGRAM: SITE EVALUATION

EPA ID: KYD061564001 PROGRAM CODE: H01

EVENT TYPE: PA1

FMS CODE: EVENT QUALIFIER :

EVENT LEAD: S

EVENT NAME: PRELIMINARY ASSESSMENT

STATUS:

DESCRIPTION:

\* \_ \_ \_ \_ \_ \*

\* \_ \_ \_ \_ \_ \*

\* \_ \_ \_ \_ \_ \*

\* \_ \_ \_ \_ \_ \*

\* \_ \_ \_ \_ \_ \*

ORIGINAL	CURRENT	ACTUAL
START:	START:	START: 04/01/84
COMP :	COMP :	COMP : 08/01/84

\* / / / / \*

\* \_/\_/\_ \_/\_/\_ \_/\_/\_ \*

HQ COMMENT:

\* \_ \_ \_ \_ \_ \*

RG COMMENT:

\* \_ \_ \_ \_ \_ \*

COOP AGR # AMENDMENT # STATUS STATE %

0

\* \_ \_ \_ \_ \_ \*

REGION: 04  
STATE : KY

U.S. ENVIRONMENTAL PROTECTION AGENCY  
OFFICE OF EMERGENCY AND REMEDIAL RESPONSE  
C E R C L I S V 1.2

PAGE: 77  
RUN DATE: 04/28/87  
RUN TIME: 08:16:12

M.2 - EVENT MAINTENANCE FORM

\* ACTION: \_

SITE: KENTUCKY PETROLEUM PRODUCTS  
PROGRAM: SITE EVALUATION

EPA ID: KYD061564001 PROGRAM CODE: H01

EVENT TYPE: SI1

FMS CODE: EVENT QUALIFIER :

EVENT LEAD: E

EVENT NAME: SITE INSPECTION

STATUS:

DESCRIPTION:

ORIGINAL

CURRENT

ACTUAL

START:

START:

START: 11/01/80

COMP :

COMP :

COMP : 11/01/80

HQ COMMENT:

RG COMMENT:

COOP AGR #

AMENDMENT #

STATUS

STATE %

0

REGION: 04  
STATE : KY

U.S. ENVIRONMENTAL PROTECTION AGENCY  
OFFICE OF EMERGENCY AND REMEDIAL RESPONSE  
C E R C L I S V 1.2

PAGE: 78  
RUN DATE: 04/28/87  
RUN TIME: 08:16:12

M.2 - COMMENT MAINTENANCE FORM

SITE: KENTUCKY PETROLEUM PRODUCTS

EPA ID: KYD061564001

COM  
NO COMMENT

001 LOW PRIORITY.

ACTION

\* -

\*



POTENTIAL HAZARDOUS WASTE SITE  
TENTATIVE DISPOSITION

REGION SITE NUMBER  
IV KYD 061569 001

File this form in the regional Hazardous Waste Log File and submit a copy to: U.S. Environmental Protection Agency; Site Tracking System, Hazardous Waste Enforcement Task Force (EN-335); 401 M St., SW, Washington, DC 20460.

I. SITE IDENTIFICATION

A. SITE NAME B. STREET  
Kentucky Petroleum Products 4019 Blanton Lane  
C. CITY D. STATE E. ZIP CODE  
Louisville (Jefferson Co.) KY 40216

II. TENTATIVE DISPOSITION

Indicate the recommended action(s) and agency(ies) that should be involved by marking 'X' in the appropriate boxes.

RECOMMENDATION	ACTION AGENCY				
	MARK 'X'	EPA	STATE	LOCAL	PRIVATE
A. NO ACTION NEEDED -- NO HAZARD					
B. INVESTIGATIVE ACTION(S) NEEDED (If yes, complete Section III.)	X	X			
C. REMEDIAL ACTION NEEDED (If yes, complete Section IV.)					
D. ENFORCEMENT ACTION NEEDED (If yes, specify in Part E whether the case will be primarily managed by the EPA or the State and what type of enforcement action is anticipated.)					

E. RATIONALE FOR DISPOSITION

Some waste oil has spilled around some storage tanks

F. INDICATE THE ESTIMATED DATE OF FINAL DISPOSITION  
(mo., day, & yr.)

G. IF A CASE DEVELOPMENT PLAN IS NECESSARY, INDICATE THE ESTIMATED DATE ON WHICH THE PLAN WILL BE DEVELOPED  
(mo., day, & yr.)

H. PREPARER INFORMATION

1. NAME 2. TELEPHONE NUMBER 3. DATE (mo., day, & yr.)  
Elizabeth Seely (404) 881-2239 12-7-89

III. INVESTIGATIVE ACTIVITY NEEDED

A. IDENTIFY ADDITIONAL INFORMATION NEEDED TO ACHIEVE A FINAL DISPOSITION.

Low priority for ST.

~ Now State

B. PROPOSED INVESTIGATIVE ACTIVITY (Detailed Information)

1. METHOD FOR OBTAINING NEEDED ADDITIONAL INFO.	2. SCHEDULED DATE OF ACTION (mo., day, & yr.)	3. TO BE PERFORMED BY (EPA, Contractor, State, etc.)	4. ESTIMATED MANHOURS	5. REMARKS
a. TYPE OF SITE INSPECTION				
(1)				
(2)				
(3)				
b. TYPE OF MONITORING				
(1)				
(2)				
c. TYPE OF SAMPLING				
(1)				
(2)				



POTENTIAL HAZARDOUS WASTE SITE  
TENTATIVE DISPOSITION

REGION IV SITE NUMBER KYD 061589 001

File this form in the regional Hazardous Waste Log File and submit a copy to: U.S. Environmental Protection Agency, Site Tracking System, Hazardous Waste Enforcement Task Force (EN-335), 401 M St., SW, Washington, DC 20460.

I. SITE IDENTIFICATION

A. SITE NAME Kentucky Petroleum Products  
B. STREET 4019 Blanton Lane  
C. CITY Louisville (Jefferson Co.)  
D. STATE KY  
E. ZIP CODE 40216

II. TENTATIVE DISPOSITION

Indicate the recommended action(s) and agency(ies) that should be involved by marking 'X' in the appropriate boxes.

RECOMMENDATION	MARK 'X'	ACTION AGENCY			
		EPA	STATE	LOCAL	PRIVATE
A. NO ACTION NEEDED -- NO HAZARD					
B. INVESTIGATIVE ACTION(S) NEEDED (If yes, complete Section III.)	X	X			
C. REMEDIAL ACTION NEEDED (If yes, complete Section IV.)					
D. ENFORCEMENT ACTION NEEDED (If yes, specify in Part E whether the case will be primarily managed by the EPA or the State and what type of enforcement action is anticipated.)					

E. RATIONALE FOR DISPOSITION

Some waste oil has spilled around some storage tanks

F. INDICATE THE ESTIMATED DATE OF FINAL DISPOSITION (mo., day, & yr.)

G. IF A CASE DEVELOPMENT PLAN IS NECESSARY, INDICATE THE ESTIMATED DATE ON WHICH THE PLAN WILL BE DEVELOPED (mo., day, & yr.)

H. PREPARER INFORMATION

1. NAME Elizabeth Seely  
2. TELEPHONE NUMBER (404) 881-2234  
3. DATE (mo., day, & yr.) 12-7-89

III. INVESTIGATIVE ACTIVITY NEEDED

A. IDENTIFY ADDITIONAL INFORMATION NEEDED TO ACHIEVE A FINAL DISPOSITION.

Low priority for SI.

B. PROPOSED INVESTIGATIVE ACTIVITY (Detailed Information)

1. METHOD FOR OBTAINING NEEDED ADDITIONAL INFO.	2. SCHEDULED DATE OF ACTION (mo., day, & yr.)	3. TO BE PERFORMED BY (EPA, Contractor, State, etc.)	4. ESTIMATED MANHOURS	5. REMARKS
a. TYPE OF SITE INSPECTION				
(1)				
(2)				
(3)				
b. TYPE OF MONITORING				
(1)				
(2)				
c. TYPE OF SAMPLING				
(1)				
(2)				



## III. INVESTIGATIVE ACTIVITY NEEDED and PART B. PROPOSED INVESTIGATIVE ACTIVITY (Continued)

d. TYPE OF LAB ANALYSIS				
(1)				
(2)				
e. OTHER (specify)				
(1)				
(2)				

C. ELABORATE ON ANY OF THE INFORMATION PROVIDED IN PART B (on front & above), AS NEEDED TO IDENTIFY ADDITIONAL INVESTIGATIVE WORK.

## D. ESTIMATED MANHOURS BY ACTION AGENCY

1. ACTION AGENCY	2. TOTAL ESTIMATED MANHOURS FOR INVESTIGATIVE ACTIVITIES	1. ACTION AGENCY	2. TOTAL ESTIMATED MANHOURS FOR INVESTIGATIVE ACTIVITIES
a. EPA		b. STATE	
c. EPA CONTRACTOR		d. OTHER (specify)	

## IV. REMEDIAL ACTIONS

A. SHORT TERM EMERGENCY STRATEGY (On Site & Off-Site) List all emergency actions needed to bring site under immediate control, e.g., restrict access, provide alternate water supply, etc. See instructions for a list of Key Words for each of the actions to be used in the space below.

1. ACTION	2. EST. START DATE (mo, day, & yr)	3. EST. END DATE (mo, day, & yr)	4. ACTION AGENCY (EPA, State, Private Party)	5. ESTIMATED COST	6. SPECIFY 311 OR OTHER ACTION; INDICATE THE MAGNITUDE OF THE WORK REQUIRED
				\$	
				\$	
				\$	
				\$	
				\$	
				\$	
				\$	

B. LONG TERM STRATEGY (On Site & Off-Site) List all long term solutions, e.g., excavation, removal, ground water monitoring wells, etc. See instructions for a list of Key Words for each of the actions to be used in the spaces below.

1. ACTION	2. EST. START DATE (mo, day, & yr)	3. EST. END DATE (mo, day, & yr)	4. ACTION AGENCY (EPA, State, Private Party)	5. ESTIMATED COST	6. SPECIFY 311 OR OTHER ACTION; INDICATE THE MAGNITUDE OF THE WORK REQUIRED
				\$	
				\$	
				\$	
				\$	
				\$	
				\$	
				\$	

## C. ESTIMATED MANHOURS AND COST BY ACTION AGENCY

1. ACTION AGENCY	2. TOTAL EST. MANHOURS FOR REMEDIAL ACTIVITIES	3. TOTAL EST. COST FOR REMEDIAL ACTIVITIES	1. ACTION AGENCY	2. TOTAL EST. MANHOURS FOR REMEDIAL ACTIVITIES	3. TOTAL EST. COST FOR REMEDIAL ACTIVITIES
a. EPA			b. STATE		
c. PRIVATE PARTIES			d. OTHER (specify)		

p214  
Rec'd. in  
done on 10/1/84

PA 5th - 8404  
PA 8th - 8408  
low

MEMORANDUM

TO: Barry Burrus, Chief *BB*  
Uncontrolled Sites Section

FROM: Jim Jarman, Geologist *JJ*  
Uncontrolled Sites Section

DATE: March 27, 1984

SUBJECT: Preliminary Assessment Report for Kentucky Petroleum  
Products - Jefferson County

Kentucky Petroleum Products is a waste oil recycler that operates several tank trucks which collect waste oil and delivers it to a small storage facility (about 15 tanks). The waste oil is stored and later sold to various companies that either refine it into petroleum products, place it in a waste oil fuel program, or burn it as a waste oil fuel. The firm is now known as Kentucky Petroleum Wastes, Inc.

Presently, the site is being handled by the Enforcement Branch of the Kentucky Division of Waste Management. Numerous violations have been documented by field personnel. A preliminary assessment and site inspection completed in 1980 did not designate any action to be taken. Tank waste oil samples taken in February 1984 indicate high levels of trichloroethylene to be present.

After reviewing the information within the division and talking with enforcement personnel, I am recommending this site be given a low priority ranking for a site inspection. The presence of trichloroethylene in these storage tanks could present an environmental problem if the contents are released.

JJ:da

cc: John Brooks  
Millie Archer  
EPA-Atlanta  
File



POTENTIAL HAZARDOUS WASTE SITE  
PRELIMINARY ASSESSMENT  
PART 1 - SITE INFORMATION AND ASSESSMENT

I. IDENTIFICATION

01 STATE 02 SITE NUMBER  
KY D061564001

II. SITE NAME AND LOCATION

01 SITE NAME (Legal, common, or descriptive name of site)	02 STREET, ROUTE NO., OR SPECIFIC LOCATION IDENTIFIER		
Kentucky Petroleum Products	4019 Blanton Lane		
03 CITY	04 STATE	05 ZIP CODE	06 COUNTY
Louisville	KY	40216	Jefferson
09 COORDINATES	07 COUNTY CODE	08 CONG DIST	
LATITUDE 38°08'50".0	056		
LONGITUDE 085°44'15".0			

10 DIRECTIONS TO SITE (Starting from nearest public road)  
Facility Location is intersection Knopp Avenue & Grade Lane - Storage tanks

III. RESPONSIBLE PARTIES

01 OWNER (If known)	02 STREET (Business, mailing, residential)		
Kentucky Petroleum Products	4019 Blanton Lane		
03 CITY	04 STATE	05 ZIP CODE	06 TELEPHONE NUMBER
Louisville	KY	40216	(502) 447-1802
07 OPERATOR (If known and different from owner)	08 STREET (Business, mailing, residential)		
SAME			
09 CITY	10 STATE	11 ZIP CODE	12 TELEPHONE NUMBER
			( )

13 TYPE OF OWNERSHIP (Check one)

☒ A. PRIVATE ☐ B. FEDERAL: \_\_\_\_\_ (Agency name)  
☐ C. STATE ☐ D. COUNTY ☐ E. MUNICIPAL  
☐ F. OTHER: \_\_\_\_\_ (Specify)  
☐ G. UNKNOWN

14 OWNER/OPERATOR NOTIFICATION ON FILE (Check all that apply)

☐ A. RCRA 3001 DATE RECEIVED: \_\_\_\_\_ MONTH DAY YEAR ☐ B. UNCONTROLLED WASTE SITE (CERCLA 103 c) DATE RECEIVED: \_\_\_\_\_ MONTH DAY YEAR ☒ C. NONE

IV. CHARACTERIZATION OF POTENTIAL HAZARD

01 ON SITE INSPECTION	BY (Check all that apply)		
<input checked="" type="checkbox"/> YES DATE 02/29/84 <input type="checkbox"/> NO MONTH DAY YEAR	<input type="checkbox"/> A. EPA <input type="checkbox"/> B. EPA CONTRACTOR <input type="checkbox"/> C. STATE <input type="checkbox"/> D. OTHER CONTRACTOR <input type="checkbox"/> E. LOCAL HEALTH OFFICIAL <input type="checkbox"/> F. OTHER: _____ (Specify) CONTRACTOR NAME(S): _____		
02 SITE STATUS (Check one)	03 YEARS OF OPERATION		
<input checked="" type="checkbox"/> A. ACTIVE <input type="checkbox"/> B. INACTIVE <input type="checkbox"/> C. UNKNOWN	BEGINNING YEAR _____ ENDING YEAR _____ <input checked="" type="checkbox"/> UNKNOWN		

04 DESCRIPTION OF SUBSTANCES POSSIBLY PRESENT, KNOWN, OR ALLEGED

Waste oil & Trichloroethylene mixed with water.

05 DESCRIPTION OF POTENTIAL HAZARD TO ENVIRONMENT AND/OR POPULATION

Spills - Floral & faunal destruction; Groundwater contamination

V. PRIORITY ASSESSMENT

01 PRIORITY FOR INSPECTION (Check one. If high or medium is checked, complete Part 2 - Waste Information and Part 3 - Description of Hazardous Conditions and Incidents)

☐ A. HIGH (Inspection required promptly) ☐ B. MEDIUM (Inspection required) ☒ C. LOW (Inspect on time available basis) ☐ D. NONE (No further action needed, complete current disposition form)

VI. INFORMATION AVAILABLE FROM

01 CONTACT	02 OF (Agency/Organization)		03 TELEPHONE NUMBER
Millie ARCHER	KynREPC - Louisville Field Office		(502) 588-4254
04 PERSON RESPONSIBLE FOR ASSESSMENT	05 AGENCY	06 ORGANIZATION	07 TELEPHONE NUMBER
Jim Jarman	KYAREPC	Div. WASTE MGT.	(502) 564-6716
			08 DATE 03/27/84 MONTH DAY YEAR





POTENTIAL HAZARDOUS WASTE SITE  
PRELIMINARY ASSESSMENT

PART 3 - DESCRIPTION OF HAZARDOUS CONDITIONS AND INCIDENTS

I. IDENTIFICATION

01 STATE 02 SITE NUMBER

Ky D061564001

II. HAZARDOUS CONDITIONS AND INCIDENTS

01 ☐ A. GROUNDWATER CONTAMINATION 02 ☐ OBSERVED (DATE: \_\_\_\_\_) ☐ POTENTIAL ☐ ALLEGED  
03 POPULATION POTENTIALLY AFFECTED: \_\_\_\_\_ 04 NARRATIVE DESCRIPTION

01 ☐ B. SURFACE WATER CONTAMINATION 02 ☐ OBSERVED (DATE: \_\_\_\_\_) ☐ POTENTIAL ☐ ALLEGED  
03 POPULATION POTENTIALLY AFFECTED: \_\_\_\_\_ 04 NARRATIVE DESCRIPTION

01 ☐ C. CONTAMINATION OF AIR 02 ☐ OBSERVED (DATE: \_\_\_\_\_) ☐ POTENTIAL ☐ ALLEGED  
03 POPULATION POTENTIALLY AFFECTED: \_\_\_\_\_ 04 NARRATIVE DESCRIPTION

01 ☐ D. FIRE/EXPLOSIVE CONDITIONS 02 ☐ OBSERVED (DATE: \_\_\_\_\_) ☐ POTENTIAL ☐ ALLEGED  
03 POPULATION POTENTIALLY AFFECTED: \_\_\_\_\_ 04 NARRATIVE DESCRIPTION

01 ☐ E. DIRECT CONTACT 02 ☐ OBSERVED (DATE: \_\_\_\_\_) ☐ POTENTIAL ☐ ALLEGED  
03 POPULATION POTENTIALLY AFFECTED: \_\_\_\_\_ 04 NARRATIVE DESCRIPTION

01 ☐ F. CONTAMINATION OF SOIL 02 ☐ OBSERVED (DATE: \_\_\_\_\_) ☐ POTENTIAL ☐ ALLEGED  
03 AREA POTENTIALLY AFFECTED: \_\_\_\_\_ (Acre(s)) 04 NARRATIVE DESCRIPTION

01 ☐ G. DRINKING WATER CONTAMINATION 02 ☐ OBSERVED (DATE: \_\_\_\_\_) ☐ POTENTIAL ☐ ALLEGED  
03 POPULATION POTENTIALLY AFFECTED: \_\_\_\_\_ 04 NARRATIVE DESCRIPTION

01 ☐ H. WORKER EXPOSURE/INJURY 02 ☐ OBSERVED (DATE: \_\_\_\_\_) ☐ POTENTIAL ☐ ALLEGED  
03 WORKERS POTENTIALLY AFFECTED: \_\_\_\_\_ 04 NARRATIVE DESCRIPTION

01 ☐ I. POPULATION EXPOSURE/INJURY 02 ☐ OBSERVED (DATE: \_\_\_\_\_) ☐ POTENTIAL ☐ ALLEGED  
03 POPULATION POTENTIALLY AFFECTED: \_\_\_\_\_ 04 NARRATIVE DESCRIPTION



POTENTIAL HAZARDOUS WASTE SITE  
PRELIMINARY ASSESSMENT

PART 3 - DESCRIPTION OF HAZARDOUS CONDITIONS AND INCIDENTS

I. IDENTIFICATION

01 STATE 02 SITE NUMBER

KY D061564001

II. HAZARDOUS CONDITIONS AND INCIDENTS (Continued)

01 ☐ J. DAMAGE TO FLORA  
04 NARRATIVE DESCRIPTION

02 ☐ OBSERVED (DATE: \_\_\_\_\_)

☐ POTENTIAL

☐ ALLEGED

01 ☐ K. DAMAGE TO FAUNA  
04 NARRATIVE DESCRIPTION (Include name(s) of species)

02 ☐ OBSERVED (DATE: \_\_\_\_\_)

☐ POTENTIAL

☐ ALLEGED

01 ☐ L. CONTAMINATION OF FOOD CHAIN  
04 NARRATIVE DESCRIPTION

02 ☐ OBSERVED (DATE: \_\_\_\_\_)

☐ POTENTIAL

☐ ALLEGED

01 ☐ M. UNSTABLE CONTAINMENT OF WASTES  
(Spills/runoff/standing liquids/leaking drums)

02 ☐ OBSERVED (DATE: \_\_\_\_\_)

☐ POTENTIAL

☐ ALLEGED

03 POPULATION POTENTIALLY AFFECTED: \_\_\_\_\_

04 NARRATIVE DESCRIPTION

01 ☐ N. DAMAGE TO OFFSITE PROPERTY  
04 NARRATIVE DESCRIPTION

02 ☐ OBSERVED (DATE: \_\_\_\_\_)

☐ POTENTIAL

☐ ALLEGED

01 ☐ O. CONTAMINATION OF SEWERS, STORM DRAINS, WWTPs  
04 NARRATIVE DESCRIPTION

02 ☐ OBSERVED (DATE: \_\_\_\_\_)

☐ POTENTIAL

☐ ALLEGED

01 ☐ P. ILLEGAL/UNAUTHORIZED DUMPING  
04 NARRATIVE DESCRIPTION

02 ☐ OBSERVED (DATE: \_\_\_\_\_)

☐ POTENTIAL

☐ ALLEGED

05 DESCRIPTION OF ANY OTHER KNOWN, POTENTIAL, OR ALLEGED HAZARDS

III. TOTAL POPULATION POTENTIALLY AFFECTED: \_\_\_\_\_

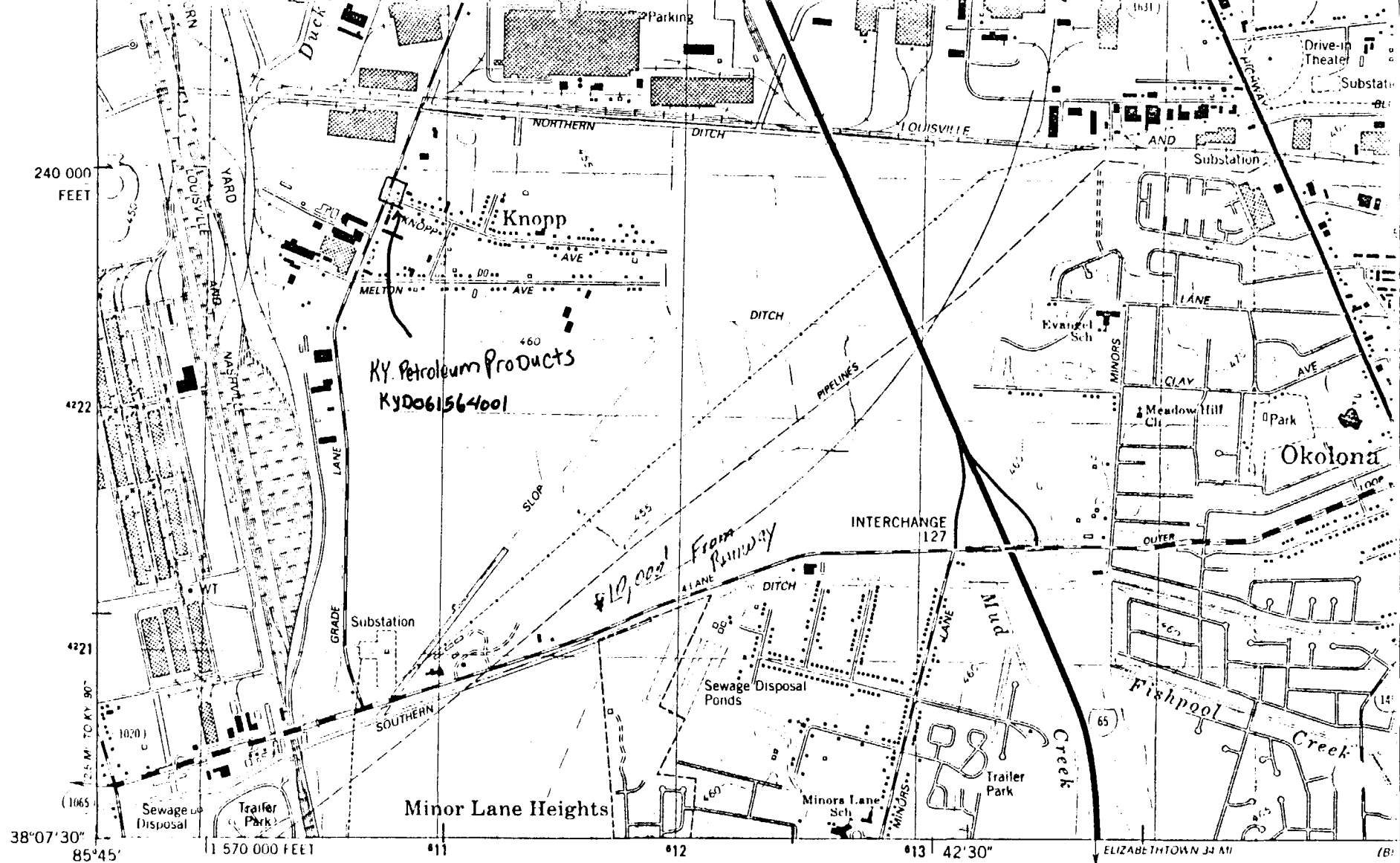
IV. COMMENTS

This facility is now Regulated by RCRA AND is now UNDER Enforcement proceedings in the Division's Enforcement Branch.  
Site Has 15(+) Tanks with waste in them - Tanks are rusting; spills are evident according

V. SOURCES OF INFORMATION (Cite specific references, e. g., state files, sample analysis, reports)

KYNEPC FILES  
Louisville field  
Personnel - Enforcement  
files.

To pictures in Division files. Sample analysis of 3/13/89 shows high concentrations of Tri-chloroethylene in tank samples. The spillage area would be good sampling locations for future inspections.



VALLEY STATION  
3860 III SE

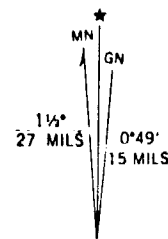
Mapped by the Army Map Service and the Geological Survey  
Edited and Published by the Geological Survey

Control by USGS, NOS/NOAA, USCE, and the City of Louisville

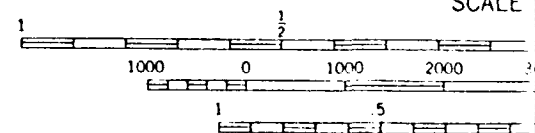
Topography by photogrammetric methods from aerial photographs  
taken 1947. Field checked 1950. Revised from aerial photographs  
taken 1978. Field checked 1979. Map edited 1982

Polyconic projection. 10,000 foot grid ticks based on  
Kentucky coordinate system, north zone  
1000-meter Universal Transverse Mercator grid, zone 16  
1927 North American Datum  
To place on predicted North American Datum 1983  
move the projection lines 4 meters south and  
3 meters west as shown by dashed corner ticks

Red tint indicates areas in which only landmark buildings are shown



UTM GRID AND 1982 MAGNETIC NORTH  
DECLINATION AT CENTER OF SHEET



CONTOUR INTERVAL  
DOTTED LINES REPRESENT  
NATIONAL GEODETIC VERTICES

THIS MAP COMPLIES WITH NATIONAL  
FOR SALE BY U. S. GEOLOGICAL  
KENTUCKY GEOLOGICAL SURVEY  
AND KENTUCKY DEPARTMENT OF COMMERCE  
A FOLDER DESCRIBING TOPOGRAPHIC MAPS



POENTIAL HAZARDOUS WASTE SITE  
IDENTIFICATION AND PRELIMINARY ASSESSMENT

REGION SITE NUMBER (to be assigned by HQ)  
39

NOTE: This form is completed for each potential hazardous waste site to help set priorities for site inspection. The information submitted on this form is based on available records and may be updated on subsequent forms as a result of additional inquiries and on-site inspections.

GENERAL INSTRUCTIONS: Complete Sections I and III through X as completely as possible before Section II (Preliminary Assessment). File this form in the Regional Hazardous Waste Log File and submit a copy to: U.S. Environmental Protection Agency; Site Tracking System; Hazardous Waste Enforcement Task Force (EN-335); 401 M St., SW; Washington, DC 20460.

I. SITE IDENTIFICATION

A. SITE NAME Kentucky Petroleum Products Co.		B. STREET (or other identifier) 4019 Blanton Lane	
C. CITY Louisville	D. STATE KY	E. ZIP CODE 40216	F. COUNTY NAME Jefferson
G. OWNER/OPERATOR (if known) 1. NAME Same		2. TELEPHONE NUMBER (502)447-1802	
H. TYPE OF OWNERSHIP <input type="checkbox"/> 1. FEDERAL <input type="checkbox"/> 2. STATE <input type="checkbox"/> 3. COUNTY <input type="checkbox"/> 4. MUNICIPAL <input checked="" type="checkbox"/> 5. PRIVATE <input type="checkbox"/> 6. UNKNOWN			
I. SITE DESCRIPTION This is a facility which reclaims waste oil, separates out sludge and water, and sellsoil to a reprocessor. Facility consists of about 15 tanksand a oil water separator.			
J. HOW IDENTIFIED (i.e., citizen's complaints, OSHA citations, etc.) Eckhardt Report			K. DATE IDENTIFIED (mo., day, & yr.)
L. PRINCIPAL STATE CONTACT 1. NAME Pat Haight		2. TELEPHONE NUMBER (502)564-6716	

II. PRELIMINARY ASSESSMENT (complete this section last)

A. APPARENT SERIOUSNESS OF PROBLEM <input type="checkbox"/> 1. HIGH <input type="checkbox"/> 2. MEDIUM <input checked="" type="checkbox"/> 3. LOW <input type="checkbox"/> 4. NONE <input type="checkbox"/> 5. UNKNOWN		
B. RECOMMENDATION <input checked="" type="checkbox"/> 1. NO ACTION NEEDED (no hazard) <input type="checkbox"/> 2. IMMEDIATE SITE INSPECTION NEEDED a. TENTATIVELY SCHEDULED FOR: b. WILL BE PERFORMED BY: <input type="checkbox"/> 3. SITE INSPECTION NEEDED a. TENTATIVELY SCHEDULED FOR: b. WILL BE PERFORMED BY: <input type="checkbox"/> 4. SITE INSPECTION NEEDED (low priority)		
C. PREPARER INFORMATION 1. NAME Carl Horneman	2. TELEPHONE NUMBER (502)588-4254	3. DATE (mo., day, & yr.) 2-27-80

III. SITE INFORMATION

A. SITE STATUS <input checked="" type="checkbox"/> 1. ACTIVE (Those industrial or municipal sites which are being used for waste treatment, storage, or disposal on a continuing basis, even if infrequently.) <input type="checkbox"/> 2. INACTIVE (Those sites which no longer receive wastes.) <input type="checkbox"/> 3. OTHER (specify):	(Those sites that include such incidents like "midnight dumping" where no regular or continuing use of the site for waste disposal has occurred.)	
B. IS GENERATOR ON SITE? <input type="checkbox"/> 1. NO <input checked="" type="checkbox"/> 2. YES (specify generator's four-digit SIC Code):		
C. AREA OF SITE (in acres) (problem) 1 acre	D. IF APPARENT SERIOUSNESS OF SITE IS HIGH, SPECIFY COORDINATES 1. LATITUDE (deg.-min.-sec.) 2. LONGITUDE (deg.-min.-sec.)	
E. ARE THERE BUILDINGS ON THE SITE? (if in problem area) <input type="checkbox"/> 1. NO <input checked="" type="checkbox"/> 2. YES (specify): Pump house		



## IV. CHARACTERIZATION OF SITE ACTIVITY

Indicate the major site activity(ies) and details relating to each activity by marking 'X' in the appropriate boxes.

<input checked="" type="checkbox"/> A. TRANSPORTER	<input checked="" type="checkbox"/> B. STORER	<input checked="" type="checkbox"/> C. TREATER	<input checked="" type="checkbox"/> D. DISPOSER
1. RAIL	1. PILE	1. FILTRATION	1. LANDFILL
2. SHIP	2. SURFACE IMPOUNDMENT	2. INCINERATION	2. LANDFARM
3. BARGE	3. DRUMS	3. VOLUME REDUCTION	3. OPEN DUMP
<input checked="" type="checkbox"/> 4. TRUCK	4. TANK, ABOVE GROUND	<input checked="" type="checkbox"/> 4. RECYCLING/RECOVERY	4. SURFACE IMPOUNDMENT
5. PIPELINE	5. TANK, BELOW GROUND	5. CHEM./PHYS. TREATMENT	5. MIDNIGHT DUMPING
6. OTHER (specify):	6. OTHER (specify):	6. BIOLOGICAL TREATMENT	6. INCINERATION
		7. WASTE OIL REPROCESSING	7. UNDERGROUND INJECTION
		8. SOLVENT RECOVERY	8. OTHER (specify):
		9. OTHER (specify):	

E. SPECIFY DETAILS OF SITE ACTIVITIES AS NEEDED

## V. WASTE RELATED INFORMATION

## A. WASTE TYPE

☐ 1. UNKNOWN    ☒ 2. LIQUID    ☐ 3. SOLID    ☐ 4. SLUDGE    ☐ 5. GAS

## B. WASTE CHARACTERISTICS

☐ 1. UNKNOWN    ☐ 2. CORROSIVE    ☐ 3. IGNITABLE    ☐ 4. RADIOACTIVE    ☐ 5. HIGHLY VOLATILE  
☐ 6. TOXIC    ☐ 7. REACTIVE    ☐ 8. INERT    ☒ 9. FLAMMABLE
☐ 10. OTHER (specify):

## C. WASTE CATEGORIES

1. Are records of wastes available? Specify items such as manifests, inventories, etc. below.

No

2. Estimate the amount (specify unit of measure) of waste by category; mark 'X' to indicate which wastes are present.

a. SLUDGE	b. OIL	c. SOLVENTS	d. CHEMICALS	e. SOLIDS	f. OTHER
AMOUNT	AMOUNT	AMOUNT	AMOUNT	AMOUNT	AMOUNT
UNIT OF MEASURE	UNIT OF MEASURE	UNIT OF MEASURE	UNIT OF MEASURE	UNIT OF MEASURE	UNIT OF MEASURE
<input checked="" type="checkbox"/> (1) PAINT, PIGMENTS	<input checked="" type="checkbox"/> (1) OILY WASTES	<input checked="" type="checkbox"/> (1) HALOGENATED SOLVENTS	<input checked="" type="checkbox"/> (1) ACIDS	<input checked="" type="checkbox"/> (1) FLYASH	<input checked="" type="checkbox"/> (1) LABORATORY PHARMACEUT.
(2) METALS SLUDGES	(2) OTHER (specify):	(2) NON-HALOGENATED SOLVENTS	(2) PICKLING LIQUORS	(2) ASBESTOS	(2) HOSPITAL
(3) FCTW		(3) OTHER (specify):	(3) CAUSTICS	(3) MILLING/MINE TAILINGS	(3) RADIOACTIVE
(4) ALUMINUM SLUDGE			(4) PESTICIDES	(4) FERROUS SMELTING WASTES	(4) MUNICIPAL
(5) OTHER (specify):			(5) DYES/INKS	(5) NON-FERROUS SMELTING WASTES	(5) OTHER (specify):
			(6) CYANIDE	(6) OTHER (specify):	
			(7) PHENOLS		
			(8) HALOGENS		
			(9) PCB		
			(10) METALS		
			(11) OTHER (specify):		

No quantity figures were obtained.

VI. WASTE RELATED INFORMATION (continued)  
 LIST SUBSTANCES OF GREATEST CONCERN WHICH MAY BE ON THE SITE (place in descending order of hazard).

None

4. ADDITIONAL COMMENTS OR NARRATIVE DESCRIPTION OF SITUATION KNOWN OR REPORTED TO EXIST AT THE SITE.

## VI. HAZARD DESCRIPTION

A. TYPE OF HAZARD	B. POTENTIAL HAZARD (mark 'X')	C. ALLEGED INCIDENT (mark 'X')	D. DATE OF INCIDENT (mo., day, yr.)	E. REMARKS
1. NO HAZARD				
2. HUMAN HEALTH				
3. NON-WORKER INJURY/EXPOSURE				
4. WORKER INJURY				
5. CONTAMINATION OF WATER SUPPLY				
6. CONTAMINATION OF FOOD CHAIN				
7. CONTAMINATION OF GROUND WATER				
8. CONTAMINATION OF SURFACE WATER	X			Steps are being taken to prevent possibility of spills (dike).
9. DAMAGE TO FLORA/FAUNA				
10. FISH KILL				
11. CONTAMINATION OF AIR				
12. NOTICEABLE ODORS				
13. CONTAMINATION OF SOIL				
14. PROPERTY DAMAGE				
15. FIRE OR EXPLOSION				
16. SPILLS/LEAKING CONTAINERS/ RUNOFF/STANDING LIQUIDS				
17. SEWER, STORM DRAIN PROBLEMS				
18. EROSION PROBLEMS				
19. INADEQUATE SECURITY				
20. INCOMPATIBLE WASTES				
21. MIDNIGHT DUMPING				
22. OTHER (specify):				

### VII. PERMIT INFORMATION

A. INDICATE ALL APPLICABLE PERMITS HELD BY THE SITE.

- ☐ 1. NPDES PERMIT    ☐ 2. SPCC PLAN    ☐ 3. STATE PERMIT (specify): \_\_\_\_\_  
☐ 4. AIR PERMITS    ☐ 5. LOCAL PERMIT    ☐ 6. RCRA TRANSPORTER  
☐ 7. RCRA STORER    ☐ 8. RCRA TREATER    ☐ 9. RCRA DISPOSER  
☐ 10. OTHER (specify): \_\_\_\_\_

B. IN COMPLIANCE?

- ☒ 1. YES    ☐ 2. NO    ☐ 3. UNKNOWN

C. WITH RESPECT TO (list regulation name & number): \_\_\_\_\_

### VIII. PAST REGULATORY ACTIONS

- ☒ A. NONE    ☐ B. YES (summarize below)

### IX. INSPECTION ACTIVITY (past or on-going)

- ☐ A. NONE    ☒ B. YES (complete items 1, 2, 3, & 4 below)

1. TYPE OF ACTIVITY	2. DATE OF PAST ACTION (mo., day, & yr.)	3. PERFORMED BY (EPA/State)	4. DESCRIPTION
Inspection	2-27-80	State	Permit application for storage facility and CWA spec plan being prepared.

### X. REMEDIAL ACTIVITY (past or on-going)

- ☒ A. NONE    ☐ B. YES (complete items 1, 2, 3, & 4 below)

1. TYPE OF ACTIVITY	2. DATE OF PAST ACTION (mo., day, & yr.)	3. PERFORMED BY (EPA/State)	4. DESCRIPTION

NOTE: Based on the information in Sections III through X, fill out the Preliminary Assessment (Section II) information on the first page of this form.